ABSTRACT OF THE

Lettsomian Lectures

ON

SOME OF THE CLINICAL ASPECTS OF GRANULAR KIDNEY.

Delivered before the Medical Society of London

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LECTURE I.[1]

Delivered on Feb. 6th, 1899.

GENTLEMEN,—Granular kidney is a disease of great importance on account of its frequency—a frequency which is by no means adequately recognised. Post mortem it is often discovered when not suspected. It is often in itself a cause of death, even of sudden death, and it often explains why death has happened in other diseases which otherwise might not have proved fatal. During life it is often discovered unexpectedly if looked for, it is often overlooked if not suspected, and it often explains a case which has been a puzzle until granular kidney gave the key. For all these reasons granular kidney is not only one of the most interesting of diseases but also one of the most important. The general frequency of granular kidney post mortem ranges from 13·2 to 18 per cent., so that it is a very common condition. Nothing will better prove the importance of granular kidney than the following statistics obtained for me by Mr. Horder, the result of an investigation made into the cause of death in persons brought into St. Bartholomew's Hospital dead or dying. The total number of such cases (excluding children under five years of age) was 79, in all of which a post-mortem examination was made. Of these 64 were dead on reaching the hospital and 15 died in the surgery. In 48 per cent. of these cases chronic interstitial nephritis was present, in 16·8 per cent. it was the only cause of death, and in 12·6 per cent. more it played its part either in producing death or in causing the lesion which led to death—i.e., it was the sole or part cause of death in 38·4 per cent. Nothing more is necessary to prove the importance and frequency of the disease. Of the remaining cases three patients had phthisis and one had pneumonia.

The influence of granular kidney upon the prognosis of other diseases may be well illustrated by the case of acute pneumonia. In 100 fatal cases which I investigated 23 showed some pre-existent chronic disease of the lungs or pleura, eight of the heart, and 10 of the kidneys.

Granular kidney is a bilateral and to a great extent symmetrical affection—that is to say, both kidneys are affected, though not necessarily to the same extent. The difference in weight, however, if there be any, is slight and rarely exceeds an ounce. The kidneys may be much contracted and greatly reduced in size, so that they may not weigh more than one and a half ounces or two ounces each. Extreme contraction such as this is really rare. The kidneys are, it is true, usually reduced in size and weight, by no means to the extent which seems generally believed, while in some instances so far from being smaller than normal they may be much above the average size and weight. In other words, there are large as well as small granular kidneys, just as there are large and small cirrhotic livers. The kidneys, moreover, are not always granular on the surface, though microscopically the interstitial change may be marked enough.

The typical granular kidney is small, contracted, hard, cirrhotic, or granular, has a nodular surface, often studded with numerous cysts. On section the whole kidney is found to be cirrhotic and wasted, but the wasting affects chiefly the cortical region. The changes consist in fibroid induration and cellular degeneration. Though often described as chronic interstitial nephritis it is an open question how far these changes are in reality of inflammatory origin. Certainly in most cases we have no more evidence of inflammatory processes in the cirrhotic kidney than we have in the cirrhotic liver.

Granular kidneys are sometimes described as of two kinds, the white and the red, and the difference in colour is held by many to denote difference in origin and they are accordingly called the contracted white and the contracted red. The small white is stated to be generally somewhat larger than the red, to be less granular on the surface, and to have more cells left, these cells being in a condition of fatty change, to which the colour is referred. These statements are not in my experience correct, for small white kidneys are often quite as small and as granular on the surface as the small red and may have quite as few or even fewer cells left and these cells are often not fatty. The two forms certainly exist. The term "contracted white" introduces confusion and seems to assume that which ought to be proved—viz., the different origin of the two forms. It suggests that the small white is but the later stage of the large white kidney. It assumes that every stage can be demonstrated between the large white kidney of chronic parenchymatous nephritis through the contracting white to the contracted white. If this was the usual sequence of events it ought to be capable of easy clinical proof. Pathologically it is easy to show that chronic parenchymatous or the large white kidney presents interstitial changes of a contracting kind, but the weak link in the chain is between the so-called contracting form and the contracted form. If the distinction between the two forms is to be made it would be very much better to speak of them as small white and small red or as white cirrhotic and red cirrhotic rather than white and red contracted kidneys. For myself I consider the difference to be really one of colour chiefly. Microscopically I do not see that any clear distinction can be drawn. If pathologically the distinction between the two forms is open to question, clinically, so far as I can see, no distinction at all can be drawn between them—that is to say, with exactly the same clinical symptoms we may find the kidneys in the one case white and in the other case red.

Granular kidney is often described as chronic interstitial nephritis but all forms of chronic interstitial nephritis are not necessarily granular kidney. First of all must be cut out of the category of granular kidney all those cases in which the lesion is unilateral—for example, that which results from obstruction to the ureters. Again, all cases of patchy fibrosis—e.g., the results of infarcts or gummata, even if both kidneys are involved—must be excluded, for they do not produce the clinical symptoms of granular kidney. Even when the lesions are bilateral and both kidneys are affected I should still exclude from the category of granular kidney certain forms of chronic interstitial nephritis which are often included pathologically, though clinically they are distinct. I refer to the degenerate kidneys met with in connexion with advanced atheromatous disease or with the chronic gout of elderly persons—in fact, the kidneys which are commonly called senile or gouty. These kidneys are often markedly interstitial and there is a good deal of fatty and cellular degeneration giving the surface a mottled appearance, but they need not necessarily be granular and are usually large. Moreover, the cases need not run the clinical course of granular kidney. Eliminating these various forms we are left with a pathological group of cases of interstitial nephritis of a definite character which we commonly recognise by the terms "granular" or "cirrhotic" kidneys.

In most recent writings granular kidney is divided into two forms, the arterio-sclerotic and the renal, and these are often dealt with in different places, the one form under diseases of the vessels, the other under diseases of the kidney, so that in order to gain a complete view of granular kidney as a disease it has to be read in different chapters. This is very inconvenient and confusing and suggests a marked difference between the two forms which clinically does not exist. It has, however, one advantage in that it fixes attention upon the question which is still at issue—viz., whether it is in the vessels or in the kidney itself that the primary causes of the disease are to be sought.

Acute nephritis attacks the cells primarily and chiefly, but the interstitial tissues are always involved to some extent and the more so the longer the disease has existed. This small-celled infiltration may in time end in the production of connective tissue at first in part only, in other cases more widely

[1] Lectures II. and III. will be delivered on Feb. 20th and March 6th, 1899, respectively.

distributed, and there will be the more of it the longer the disease has lasted. The large red kidney of acute nephritis passes as the disease lasts gradually into the large white. In the large white kidney some interstitial change is often found—sometimes local, at other times more diffuse; and admitting that pathological connective tissue contracts in the kidney as elsewhere we should expect the large white kidney in time to become smaller, to undergo a certain degree of contraction in parts if not as a whole, and of this we have frequent pathological proof. The kidney is then described as "contracting white." It is even conceivable theoretically that the contraction might go much further, so that in time we might have the large white kidney passing into what may be described as a small white kidney or even possibly ending in a small red kidney.

Now, admitting the pathological possibility that acute parenchymatous nephritis might end in a granular kidney, if this actually occurred frequently it ought to be capable of easy clinical proof, for the symptoms of acute nephritis are not such as are likely to be often overlooked by the patient or by the friends of the patient. Such cases are recorded, but they are certainly rare, and many of them prove on careful critical investigation not to be so conclusive as they at first sight appear. I have been on the watch for them for years, and although I have seen many in which the lesion has gone so far as to produce a somewhat diminished white kidney, the majority of such kidneys are still much above normal size. I have never traced a single case beyond this—i.e., as far as a small white kidney. I do not say that it does not occur; on the contrary, I believe it may. I merely say that so far I have failed to observe it. It might be urged that marked contraction in granular kidney would be more frequent if the patients lived long enough. But it does not necessarily follow even when the symptoms of chronic parenchymatous nephritis have lasted for many years that a contracted kidney will result. I know of a woman who has had several attacks of parenchymatous nephritis in the course of 13 years and who has never at any time lost the albumin from the urine; yet now, at the end of 13 years, her arteries are thin and her heart is not hypertrophied, she appears to be in fair health and her retinæ are normal, and there are, in fact, in spite of the long duration of the case, no clinical signs whatever which would justify the diagnosis of granular kidney. Nor can any closer relation be proved by the clinical history to exist between granular kidney and antecedent acute nephritis. It is quite unusual in cases of granular kidney to obtain any history of symptoms which would in any way justify the diagnosis of acute nephritis. This fact has been always insisted on as long as granular kidney has been recognised as a disease and it is generally accepted. Even when the history of antecedent acute nephritis is obtained it does not necessarily follow that the granular kidney has been the result of it. The occurrence of acute nephritis is no proof in itself that prior to the acute nephritis the kidney was sound or, in other words, that if after an attack of acute nephritis the kidneys are found granular they became granular as the result of the acute attack. For, on the one hand, it is not uncommon in the course of a case already recognised as one of granular kidney to see acute parenchymatous nephritis develop, and, on the other, to see a patient hitherto believed to be healthy with the symptoms of acute parenchymatous nephritis, and yet for that patient to present thickened arteries and even eye-changes which show that the disease really dated long before the commencement of the so-called acute attack—in other words, that the patient has got acute nephritis in both cases alike because the kidneys were already diseased. Indeed, I think we may almost go so far as to say that as in children acute parenchymatous nephritis raises a strong presumption in favour of a recent attack of scarlet fever, so in the adult it ought to suggest the suspicion that the kidneys were previously unsound—in other words, granular. Of this I am quite sure that if in cases of acute nephritis in the adult the signs of granular kidney be looked for they will very frequently be found. If, then, in spite of the fact that in the majority of cases of granular kidney the history and symptoms of nephritis are lacking, granular kidney is still to be referred to some antecedent nephritis, it follows that the initial attack must either have been slight and therefore overlooked or else that it was of some peculiar and specially latent kind.

It is evident from what has been said that it is only in a very small number of cases that a history of antecedent acute nephritis can be obtained; that in still fewer instances can a case be traced from an initial acute nephritis to granular kidney. It follows, therefore, that most cases of granular kidney must be referred to some other origin.

The changes in the arteries with granular kidney are general, widespread, in fact universal, throughout the whole body. They are found in all parts alike, in the kidney, for instance, as well as in the brain, the eye, the spinal cord, or even the skin. Now, there are only two forms of general arterial change recognised in pathology—viz., atheroma and that connected with granular kidney. Atheroma is a well-marked disease of the vessels. It is the degeneration which is usual as age advances, and though sometimes met with in earlier life and sometimes even in quite young people it is certainly a comparatively rare affection at the time when the changes of granular kidney are most common. Atheroma being a general disease will, of course, affect the renal arteries like any other and will produce in the kidneys similar changes to those to which it leads in other cellular organs—e.g., in the brain. Thus it is not at all uncommon in the later periods of life to find the kidneys large and mottled, showing a good deal of interstitial tissue and of cellular change, yet these atheromatous or senile changes do not as a rule, though they may sometimes, lead to the well-known granular contracted kidney. Of course, old persons may suffer from granular kidney and the two conditions may be associated. But for all that if the question be regarded without bias and in a general comprehensive way it must be acknowledged that atheromatous diseases of the arteries and the changes of granular kidney are different in kind as well as in history. In granular kidney the thickening of the vessels is fairly uniform, at any rate it does not occur in the irregular patches of atheroma, and is universal. As to the exact nature of the change in the vessels opinions still differ as they have done from the first. There can be no doubt that there is a considerable amount of muscular hypertrophy in the vessels or that it is associated in many cases with changes in the intima as well as in the adventitia, which are not atheromatous, and yet are of a marked character.

The relation between the cardio-vascular and the renal lesions is very difficult to determine. So far as the cardio-vascular symptoms go I think we may say this—that the cardiac lesions being of the nature of hypertrophy must, as in other cases, be the response of the heart to some extra work thrown upon it of a permanent kind; it must therefore be secondary. It certainly seems more probable that both the heart and the vessels hypertrophy together for the purpose of assisting the circulation to overcome some obstruction. If this be so the obstruction must be peripherally seated and must be sought therefore in the small peripheral arteries or capillaries. In these peripheral vessels the possible causes of obstruction are two: either there must be a structural change—that is to say, an anatomical lesion—or some functional disturbance which interferes with the passage of the circulation through the vessels. If the change be structural and the lesions of the peripheral vessels are of a degenerative character, being general throughout the whole of the body they would involve the kidneys as well as other parts and in this way it is conceivable that the kidney disease might be a coördinate or subordinate part of the general vascular disease. This is a theory which is now indicated by the term "arterial-sclerosis" and such kidneys are described as "arterio-sclerotic" kidneys.

If, on the other hand, the change here be not of a structural kind but a functional one, any structural change that is found being of a secondary and subsequent order, the obstruction must depend upon some impurity in the blood. But this impurity of the blood which renders it more or less obnoxious to the tissues may be either of a renal or extra-renal origin. If of extra-renal origin then the result may be the same as in the former case—viz., a general vascular disease which affects the kidney as well as other parts; but it may also be of a renal origin, in which case there must have been some renal mischief antecedent. Thus even from the point of view of the vessels we are brought back again to the two original views about which so much discussion has raged—viz., whether the disease is primarily arterial or primarily renal. If the changes in the vessels be regarded as primary, as they certainly are in atheroma and may be also in granular kidney, then it might be possible to find cases of marked changes in the vessels with little or no changes in the kidney. And the same would be true if the changes in the vessels and in the kidney both stood in relation to some common cause.

It is only by studying the beginnings of the disease—that is to say, granular kidney in its early stages—that we can hope to arrive at a solution of these difficulties, for in the later stages all these changes are present together and it is difficult, if not impossible, to form any opinion as to precedence of the one or the other. From whatever point of view then we regard granular kidney, whether pathological or clinical, we come to the same conclusion—viz., that whether primarily arterial or primarily renal granular kidney is a disease *sui generis* and ought on that account to be treated in writing on the subject under a separate heading and not split up, as it generally is, between diseases of the arteries on the one hand and diseases of the kidneys on the other.

Granular kidney is a very insidious disease. For a long time it presents no symptoms at all and can be recognised then by physical signs alone. The only definite symptom perhaps in the early stage (and even this is not constant) is an increased frequency of micturition, especially at night; but as this has been of such gradual onset that the patient has become quite accustomed to it and does not regard it as peculiar no complaint is made of it unless it be extreme, and the history of it is often only to be elicited on pointed questioning. When symptoms arise the disease is already far advanced. In other words, the symptoms do not occur until late in the disease. The symptoms fall, like the lesions, into groups—viz., "cardio-vascular" and "renal." Speaking generally, the cardio-vascular are earlier than the renal. The cardiac symptoms are those of heart failure more or less pronounced. The vascular symptoms are the more or less mechanical effects of the vascular lesion and consist chiefly of hæmorrhage and its results. The renal symptoms are the latest to develop and they fall into two groups according as they are of gradual development or of sudden onset and they are frequently described as chronic and acute uræmia respectively. I should prefer to call them acute and chronic renal toxæmia. Both alike are to be connected with the wasting in the kidney and its consequent defective action. The gradual and progressive wasting is attended with the gradual and progressive development of the chronic form of uræmia. "Renal cachexia" is the name which I should prefer to give to chronic uræmia. It strongly resembles, both in character and course, the cachexia which is seen in a variety of other diseases—e.g., in Addison's disease, in the later stages of cirrhosis hepatitis, in diabetes, and in malignant disease. It consists in a gradually increasing anæmia and asthenia, associated with various miscellaneous symptoms. The symptoms in all these cases are similar, but differ from those which are usually described as acute uræmia, and the difference is probably not one of degree only but of kind, so that I think they ought to be distinguished by different names. For the first I should reserve the term "renal cachexia" and for the second I should use that term which is generally accepted—viz., "uræmia"; and both alike, both the cachexia and the uræmia, may be of slow or sudden development.

I propose to deal with the signs and symptoms of the disease in this order: (1) the physical signs; (2) the cardio-vascular symptoms; and (3) the renal symptoms. It is the early signs of the disease rather than the late symptoms which are of importance. What is required is an early diagnosis before the disease is far advanced and this is essential if light is to be thrown upon the causes and course of the disease or if influence upon it is to be successfully exerted upon it by treatment. In the early stage the diagnosis is to be made by physical signs and not by symptoms.

The physical signs are high tension and thickened arteries, hypertrophy of the heart, and albuminuria. When these are all present together the diagnosis is easy even in the young and the diagnosis thus made during life is verified post mortem. But if one or other of these physical signs is absent the question arises, Of what value are those remaining? For instance, if albumin is absent what do high tension and thickened arteries mean in the young? Or if the arteries are not thick or the tension high, but albumin be present, what is the significance of the albuminuria? Each of these questions is of great clinical importance. We know that the vascular changes—viz., thickened arteries and high pulse-tension—develop so early in the course of granular kidney that they seem to be rather coincident, or, as some maintain, even antecedent, phenomena than effects consequent upon and produced by the kidney lesion. If this were so vascular changes might be found without the kidney lesion and such cases are described.

Post-mortem evidence would point to hypertrophy of the heart as a most important sign of granular kidney, and so it is in the later stages where the cardiac enlargement is such as to be easily made out by percussion. In the early stages it is of very little assistance because of the difficulty in diagnosing it then. The hypertrophy of the heart is probably secondary to the vascular changes and the result of them, and therefore not of the prime importance some are, or so likely to be met with early.

Thickening of the arteries is one of the cardinal signs of the disease and is never absent in advanced cases. I have already referred to the fact that thickening of the arteries is by no means uncommon in young people and the question as to what its significance is becomes important in relation to the early signs of granular kidney. Now, at this age the thickening cannot often be of an atheromatous nature, for although atheroma does occur in early life it is very much rarer than is the thickening which I am speaking of. The change is in great part muscular no doubt, as it is in granular kidney, and the effect of nitrite of amyl upon it is the same. Arterial thickening always rouses my suspicion in young people and leads me to make a careful examination for other symptoms; sometimes they are found and the diagnosis is clear, but not unfrequently nothing else is found and the doubt remains as to the meaning of this thickening in relation to granular kidney, but that it is pathological there can be no question.

In well-marked—i.e., advanced—granular kidney the high tension-pulse as well as the thickened arteries are well recognised. The tension is measured between the pulse waves; the arteries, therefore, feel abnormally full as well as abnormally tense. When the heart begins to fail the diminished force does not necessarily alter the character of the wave. When the tension falls the fall is due to a failure of the artery and not necessarily of the heart at all, though both may fail together. The low tension then observed is a neuro-paralytic phenomenon and a bad sign; it occurs only in the later stages of the disease but may then continue for some time. Though the tension be low the thickening of the arteries can still be easily made out and is as characteristic as ever. A persistently high tension to whatever cause due is of itself pernicious, but not so with granular kidney, paradoxical as this may seem. The patient is best without granular kidneys, but if the kidneys be granular it is better that the tension should be high rather than low; in other words, the patient is worse with a low tension; and this explains the benefit of digitalis in such cases—it does so much good by raising the arterial tension. This low arterial tension, or rather the fall in tension, in the later stages of granular kidney is of great clinical importance the value of which Sir William Broadbent has lately emphasised. To one other phenomenon I may refer which, though implied by what has just been said, is not generally recognised, although easy to be observed if looked for. I refer to the irregular fluctuations in tension which take place in the later stages of the disease before the tension becomes persistently low. Thus it may be felt to vary considerably even in very short spaces of time—even, for instance, while the finger is placed upon the pulse. In the early stages of granular kidney, go back as far as we may, as soon as the disease is diagnosable the pulse tension is high and the artery is thickened. The question arises, What is the value of a high-pulse tension in a person in whom there is not yet other evidence enough to diagnose granular kidney by? Temporary or transient increase of tension may occur in a variety of affections, but it is not to these that I refer. I am dealing with those cases in which the tension is persistently raised. Sir William Broadbent, differing as he does from Mahomed in theory, yet attaches quite as great significance to this increase of pulse tension. He describes as the ultimate results of this increased tension a variety of symptoms, cardiac failure, general disturbances of health, a sort of cachexia, and even hæmorrhage, which, as he stated, could be truly predicted long before it occurred. These are of course the same symptoms as those produced by advanced granular kidney. If the kidneys are not granular in these cases, of which no proof is given, the arteries must at any rate become diseased if hæmorrhage is to occur, for I can suppose it will hardly be asserted that mere increase of tension can

lead to the rupture of healthy vessels. In respect of the results therefore the views of the different authors agree exactly and differ only as to whether the results are to be referred to granular kidney or not. These differences in theory would remain a matter of opinion still if there were not some fresh facts by which to elucidate them and these have been obtained by the more exact and careful study of the early eye-changes met with in granular kidney. As I shall show shortly, our knowledge of the early stages of albuminuric retinitis has been greatly extended of recent years. If in many of these doubtful cases of high pulse tension and thickened artery albuminuric retinitis or the early changes which lead to it are found, even in the cases in which albumin may not be present in the urine, the diagnosis of granular kidney will be surely justified. Considering that albuminuric retinitis is not of course invariably found even in advanced granular kidney, that it can be discovered in these earlier doubtful cases is a significant fact which throws a startling light upon many of those other cases which must still remain more or less doubtful. Some of these doubtful cases, therefore, at any rate must be referred to the group of granular kidney and the possibility that a much larger number of them can be fairly so referred is therefore increased. It appears to me, therefore, that the presumption is very strong indeed in favour of these cases of high pulse tension as well as those of thickened arteries in the young being the initial stages of granular kidney which it is so important to recognise.

A Clinical Lecture

ON

CAISSON DISEASE OR COMPRESSED AIR ILLNESS.

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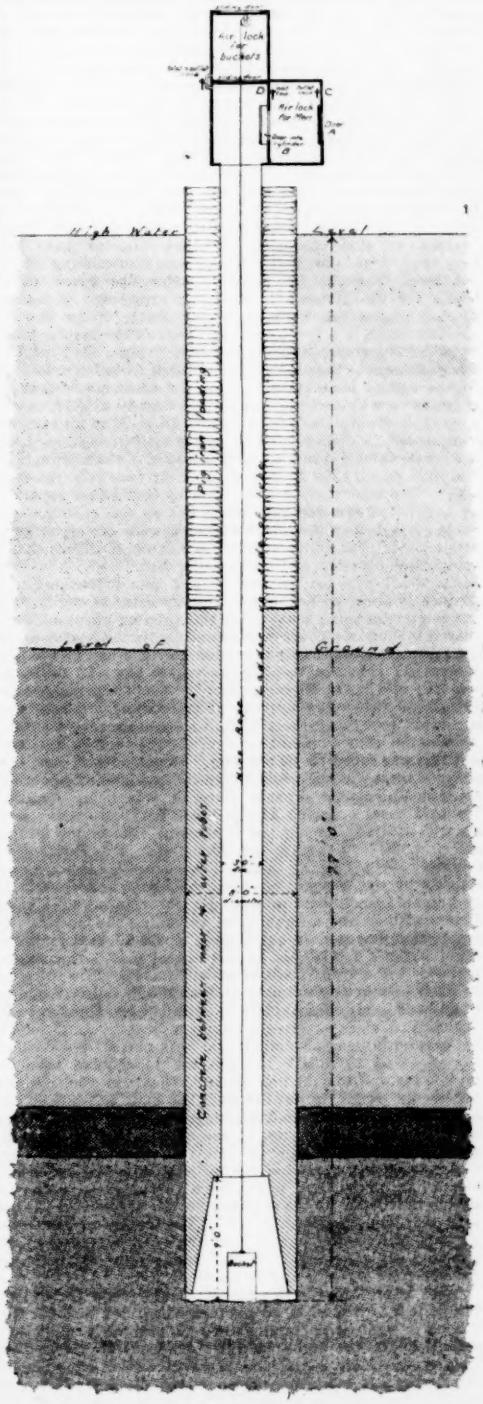
GENTLEMEN,—Caisson disease or compressed air illness may justly be regarded as a product of modern civilisation. At the Redheugh Bridge which spans the Tyne not far from here operations are being carried on which have for their object practically the rebuilding of the bridge. Men are excavating the bed of the river so as to obtain a suitable foundation for the piers and in order to do this they are obliged to work in closed iron cylinders called caissons. On leaving work a few of the men have been ill and as two of them have come under my care their illness has given me the opportunity of drawing attention to this interesting malady. I will read first a few notes of one of the cases taken by Miss Alström, clinical clerk, and after that we will discuss the subject generally and at greater length.

A married man, aged 45 years, a sinker, was admitted on Sept. 29th complaining of loss of power in the legs and arms and of pains all over his body. Until two days ago the patient was working in one of the cylinders at the Redheugh Bridge, 77 ft. below high-water level mark and under an atmospheric pressure of from 31 to 35 pounds to the square inch. On Sept. 27th as he was returning from work he experienced a peculiar numbness and tingling sensation all at once in his legs, felt sick and vomited, became giddy, and shortly afterwards fell to the ground unconscious. His comrades carried him home. 12 hours later consciousness returned and he complained of being in pain all over his body; his muscles were so sore and stiff that he could not turn over in bed; his limbs felt powerless. There was considerable headache and a buzzing in his ears. There was rather profuse perspiration. Next morning he got up and dressed intending to return to his work; his nose began to bleed, but this did not prevent him leaving home. He had not gone far, however, when he again lost consciousness. It was in this condition that the patient was brought to the infirmary. On coming to himself he complained of the same agonising muscular pain as on the previous day; his breathing was difficult; there was a feeling of sickness and his skin was perspiring freely. With regard to his previous history the patient had followed the occupation of a sinker for 20 years, sometimes in connexion with coal mining in the north and latterly in connexion with the Tower Bridge in London. Until now he had never suffered from the effects of his employment. He had been a steady man, seldom averaging more than a pint of beer daily. In his family history there was nothing of importance. On admission the patient was found to be cold, collapsed, and perspiring. His pupils were normal; the pulse was slow and full; there was marked muscular rigidity; pain seemed to be felt on making passive movement; and there was dyspnœa but no cyanosis of any moment. On regaining consciousness he complained of loss of power in his extremities, throbbing in the head, pains in his muscles, and a feeling of oppression in the chest. He was rather deaf. Subsequently he had a rigor, not followed by a rise of temperature. That night he had rather broken sleep. Next morning we found that the muscular rigidity had passed off, the knee-jerks were exaggerated, sensation was unimpaired, and the dyspnœa was less. There was no bladder implication. The urine was free from albumin and sugar. In the course of the day he vomited and wandered, the delirium assuming rather a noisy character. He was given stimulants and a hypodermic injection of liquor strychniæ. These relieved him. That evening he slept better. On Oct. 1st his pulse which had never been higher than 60 was 56; it was small and firm. The skin was observed to be covered with discrete coffee-coloured spots varying in size from a pin's head to a small bean not elevated. Pain was felt on firmly compressing the muscles. The apex beat of the heart was well defined; the first sound was feeble over the mitral area and the second aortic sound was well marked. The lungs presented nothing abnormal; the respirations were 18. Liver dulness normal; splenic dulness perhaps a little more pronounced than usual. In walking it was noticed that the feet were kept widely apart and there was slight staggering from side to side with a tendency to fall forwards. The patient had barely gone a few yards before he became extremely pale and would have fainted had he not been caught and lifted on to bed. It was several minutes before he rallied and it was an hour or two before the feeling of exhaustion passed away. Under the microscope the red blood corpuscles seemed paler than usual. They did not form rouleaux; the cells seemed to be of unequal size; the white corpuscles were not increased in number. The urine was acid, had a specific gravity of 1020, and was free from albumin and sugar. There were 10·25 grains of urea per ounce of urine. For several days we did not try him walking; he complained of feeling giddy, of buzzing in his ears, and of pains in his limbs. By degrees these symptoms gradually got less and as he felt better he left the infirmary rather against my wishes. He returned on Nov. 8th, 11 days afterwards. He told me that he had been in bed all the time and he certainly looked very feeble and could only crawl. There was still muscular pains in his shoulders and limbs and lower part of the back with a sense of numbness. His breathing was short. There was a constant feeling of giddiness and occasionally a ringing in his ears. He had had a few days previously a slight hæmoptysis. The knee-jerks were not exaggerated.

It was in the sixteenth century that the diving bell was introduced by Sturmius. Into it as no air was kept circulating the workmen took bottles of air and from time to time broke them. Subsequently a tube from an air-pump was connected through the diving bell with a cowl placed over the head of the men so that they could leave the bell and work under the water. It is a long leap from the sixteenth century to the end of the nineteenth and from the simple diving bell to the caisson of to-day, but the same idea runs through all the methods employed. When we speak of a caisson we mean a cylinder composed of iron plates riveted together, and which when of the required length is sunk on to the bed of a river, so as to form a shaft down which when it is properly closed at the top by a perfect fitting diaphragm men descend, air previously having been driven in under pressure so as to force water out of the shaft at the bottom and to keep it out. In order to allow

of men entering and leaving the cylinder there is attached to the shaft close to the diaphragm a chamber or lock with an inner and outer air-tight door, both of which open towards the interior of the shaft that contains the compressed air, mechanical arrangements existing inside the lock in the shape of cocks whereby pressure can be gradually increased or diminished, so that men before passing into the compressed air in the shaft or after having emerged from it are brought by degrees under the influence of an increasing or diminishing air pressure. Caissons were first employed by a French engineer, M. Triger, who used them for boring wells and fixing piles for bridges. From the earliest period that men have worked in the cylinders under compressed air they have complained of pains in the ears and pains in the joints. Dr. Snell, who acted as medical officer to the Blackwall Tunnel and who has embodied his experience of this illness in a monograph on Caisson disease which has supplied me with many of the facts stated in his lecture, informs us that the first medical memoir written on this subject was by MM. Pol and Watelle. The physiological effects stated were pains in the tympanum, lessened frequency of respiration and of pulse, and increased urinary secretion. Of 64 workmen exposed to the influence of compressed air 47 stood the work well, 25 gave up the employment, and two died. Men who work at this particular occupation are exposed to two sets of conditions, both of which are attended by danger: (1) in going into the compressed air and (2) in coming out of it, and the question which first suggests itself is which is the more dangerous, "compression" or "decompression." The patient whose notes I have detailed says that he felt compression the more unpleasant of the two. There is little doubt, however, that decompression, that is, the coming out of the compressed air and returning to that of normal atmospheric pressure, is the more likely to be attended by symptoms. On the ordinary level of the earth's surface each of us is bearing an atmospheric pressure of 15 lb. to the square inch, but because this is pressing equally all around and upon us we are unconscious of the weight and this remark holds true *cæteris paribus* whether we dive under the water or descend into a coal-pit. Knowing these facts engineers thought that if men were subjected to compressed air they could be brought to bear the increased weight with impunity, since the pressure would be equal on all sides and that little or no risk would therefore be incurred by exposure to two, three, or four atmospheres, or, in other words, to 30, 45, or 60 lb. to the square inch. The need for using caissons is apparent when, as in the case of the Redheugh Bridge, it is necessary, in order that new piers shall be built capable of supporting enormous weights, for a substantial foundation to be got by penetrating to the depths of the river-bed. At this bridge the men are working in the caissons at a depth of 77 ft. below high-water level mark, the length of the cylinders themselves being 90 ft. Mr. Huntley, the resident engineer, tells me that the bottom 30 ft. of each cylinder were first riveted together and then lowered on to the river-bed in its correct position. Outside of this is another cylinder. The two are united at the bottom. The space between the two tubes is filled with cement. Other 20 ft. of iron plates were riveted on to these and concrete again added. The air-lock was then bolted on to the top of the inner tube and air pumped in until the water was driven out by pressure. Men were now sent down to excavate the soil at the bed of the river. Two men work in each cylinder. They shovel the soil into large buckets which when filled are raised by a small engine fixed outside the lock. As the cylinder keeps sinking by its own weight new lengths of iron shafting have to be added to it and into the space between the two tubes which has been filled with concrete bars of pig iron are thrown so as to help the sinking of the caisson. In order to enter the cylinder one has to pass into the workman's lock by the door A (vide illustration), door B which opens into the main shaft being at this time perfectly closed and kept thus by the great pressure within the cylinder. Once in the lock and door A closed tightly, the outlet cock C being closed, the inlet cock D is gradually opened. This allows of the compressed air of the shaft escaping into the lock, so that when the pressure inside the lock becomes equal to that inside the cylinder the door B opens of itself. The workman enters the shaft and descends by means of a ladder to his work at the bed of the river. On leaving the caisson the process is reversed. The time usually occupied in passing through the lock is about one minute for every three pounds of pressure. The buckets when filled with soil are passed through the material lock in a manner similar to that already mentioned with the exception that the sliding doors and cocks are operated by men outside the locks, air being let in and out of the locks very rapidly. After having made their way through 60 ft. of the



Section of cylinder showing air locks by which entrance is gained.

river bed the excavators came upon a seam of coal three feet in thickness and as seen from the illustration they are now working several feet below this.

It was in 1851 that caissons were first used in this country by Hughes for securing foundations for a bridge at Rochester over the Medway at a depth of 61 feet; subsequently by Brunel for the bridge at Chepstow over the Wye, and later at Saltash where one of the workmen died very shortly after leaving the cylinder in which he had been working at a depth of 87·5 feet and under a maximum pressure of 40 lb. In 1859 during the building of the bridge of Kaffre-Azzyat over the Nile five Arabs died from the effects of the compressed air. Blood is said to have issued from their mouths, noses, and ears. The depth of the working was 85 feet below high water and the pressure was 34 lb. to the square inch. Since then bridges have been built all over the world by means of caissons—e.g., the Brooklyn Bridge at New York, and in our own country the most notable undertakings of this character in which caissons have been employed were the Forth Bridge and the making of the Blackwall Tunnel. Dr. James Hunter has given in his thesis for the Edinburgh M.D. his experience of caisson disease among the workmen at the Forth Bridge and Dr. Andrew Smith in a brochure his opinion of the illness gained by attending workmen at the Brooklyn Bridge. In New York Dr. Smith states that the pressure varied from 18 lb. to 36 lb. to the square inch above that of the atmosphere, that the caissons were lighted by gas, and that from 50 to 150 men were employed during the day and from 15 to 30 at night. The compressed air chambers were said to be well ventilated, but the air contained as much as 0·3 per cent. of carbonic acid, to maintain which 150,000 cubic feet of air were required every hour. The men worked two shifts of four hours separated by a period of rest for two hours, but as the caissons sank deeper and deeper the hours of work were correspondingly diminished. Dr. Smith treated 110 cases of illness due to compressed air; three of the patients died.

At the Forth Bridge Dr. Hunter found that epistaxis frequently occurred in the men shortly after emerging from the compressed air; that while the primary effect of being placed in compressed air was to accelerate the heart's action the pulse gradually became smaller and the arterial tension increased; that the respirations varied from 12 to 14 per minute; and that the temperature was sometimes above and sometimes below the normal. The pressure the men were subjected to ranged from 15 lb. to 34 lb. above the normal. At first the men worked from four to six hours at a stretch but this was found to be too long. It was noticed that they suffered most when the soft silt in the bed of the river which contained decaying organic material was being removed. No fatal cases occurred at the Forth but there was a large amount of illness among the workmen. One of my clinical clerks went into the caisson along with Mr. Huntley the engineer. He informs me that the candles burnt more quickly in the compressed than ordinary atmospheric air and created much more smoke. He experienced a feeling of fitness without any fatigue after ascending the ladder. His respiration was at first quickened; it was 40 in the minute; Mr. Huntley's was 20, but he was accustomed to the caisson, while that of another medical student was 32. The pulse was in each instance quickened; at first 100, it fell in a quarter of an hour in my clinical clerk to 88 and in Mr. Huntley to 65. My clinical clerk experienced very unpleasant sensations in his ears until he swallowed air and for a period kept swallowing it so as to inflate through the Eustachian tube the middle-ear. He could not whistle when in the cylinder but could speak quite easily. He had no difficulty of breathing and no uncomfortable feeling other than that just mentioned. The pressure in the caisson was 41 lb. to the square inch. In passing out through the lock and when undergoing decompression the air was observed to become steam-like, dense, and white for a few seconds, a circumstance attributed by the engineer to the air being no longer able to retain moisture so well. The expansion cooled the air and the cooling caused the condensation. One of the students on emerging from the caisson had epistaxis and rather severe ear-ache and face-ache.

With regard to the symptoms, nearly every person who has gone into a caisson of compressed air for the first time has after coming out complained of extremely unpleasant sensations in the ear amounting at times to severe pain. This is doubtless a mechanical effect and is the result of the tympanum being driven in by the compressed air, for when a workman has acquired the faculty of swallowing air and passing it up the Eustachian tube this inconvenience is no longer felt. A cold in the head or a sore throat is a counter indication to anyone entering a caisson, experience having demonstrated that under these circumstances excruciating pain may be felt which is referred either to the ears or to the forehead. It is natural to expect where a man in a cylinder is exposed to highly compressed air, where the whole body is being pressed, that some bad effects would follow the heightened arterial tension present. The conditions are so unnatural that men can work with safety only a few hours at a time, from two to four hours being according to the pressure a sufficiently lengthened period of exposure. In my conversations with the Redheugh Bridge contractors and the engineer I am told that when the workmen are in the caisson they experience no ill effects; they feel so buoyed up and are so highly strung that in a given time they do far more and much harder work than when above ground; that they are unconscious of using any undue physical exertion and do not feel fatigued; the men perspire freely and rub themselves, thus producing an eruption on the skin which becomes itchy; also that candles burn with greater rapidity in compressed air. Inside the caisson, therefore, it would appear as if vital processes were hurried on, metabolism more active, and consequently a greater strain thrown upon eliminating organs. It is not when men are in the compressed air but after decompression that symptoms arise and these are, in addition to those already mentioned, a feeling of giddiness with a tendency to fall, loss of power in the legs amounting at times to paralysis, severe pains in the legs, arms, and shoulders called by the workmen "bends," epistaxis, hæmoptysis, and occasionally unconsciousness.

What is the cause of the symptoms? There is the fact of pressure, and that this plays a part in producing them is shown by this circumstance that as the pressure in the caisson is raised so is there an increase in the number of patients. On the Tyne the men always noticed that when the pressure inside the caisson was raised so as to keep pace with the rising tide outside there was a greater tendency to suffer. In other words, working under a pressure of 39 lb. to the square inch was worse than one of 32 lb. The condition of the air inside the cylinder, too, is of some importance. From the fact that candles are known to burn more brilliantly and quickly inside the caissons than in the ordinary atmosphere the air tends to become polluted by the smoke and by the exhalations of the workers. In the caissons at the Brooklyn Bridge each man was supplied with from 1000 to 3000 cubic feet of air per hour. This air is said to have contained 0·3 per cent. of carbonic acid, as against 0·06, which is regarded as the maximum in a well-ventilated space. Under such a condition it cannot be said that the men were breathing a very pure air. 6000 cubic feet of air per hour per man is the amount which some engineers and medical men say ought to be supplied. At the Redheugh Bridge where my patient was working 3000 cubic feet were given, but since that date the contractors have been allowing 5000 cubic feet per hour. Hersent, a French engineer, experimented at Bordeaux in 1893 and 1894 with the view of ascertaining what pressures could be borne with safety. Dogs first, and subsequently men, were placed in chambers capable of withstanding high pressures. Several of the dogs became paralysed the day after decompression, others very shortly after emerging from the caisson. The paralysis varied in its duration. In some of the animals the blood-vessels of the spinal cord contained globules of air. In the case of the men similarly exposed to high aerial pressure he found that when they were subjected to a pressure of from 28 lb. to 76 lb. to the square inch for an hour at a time many of them subsequently suffered from severe pains in the limbs and itchiness of the skin.

The morbid anatomy of compressed air illness has yet to be written. Congestion of the membranes of the brain and spinal cord, extravasation of blood within the dura mater, softening of limited areas in the spinal cord and fissures therein caused by escape of gas, congestion of the lungs and dilated right heart, and the presence in the blood-vessels of bubbles of air have all been noted. The physiology and pathology of the action of compressed air are not well known. Personally I own to having a difficulty in coming to a definite opinion upon this subject. An individual in a caisson is exposed to an enormous atmospheric pressure, his whole body is squeezed thereby, his superficial arteries are contracted, the most compressible part of his body—viz., the abdomen—is squeezed, and the interior of his lungs is

brought under the influence of an abnormal distending force. How does the body behave under these circumstances? The oxygen of the atmosphere is being forced in through the pulmonary capillaries under tremendous pressure. Can the carbonic acid correspondingly as quickly escape? Some writers maintain that at first the carbonic acid is increased and subsequently that its elimination is checked—the former being purely a chemical effect, the latter the result of some mechanical hindrance. The hæmoglobin of the blood takes up oxygen quite irrespectively of pressure, but under the enormous pressure workmen are exposed to in the caissons it is thought that a larger amount of oxygen is absorbed, not so much taken up by the corpuscles as simply dissolved in the blood. The part played by the nitrogen of the air need not be discussed, for it is a passive gas. When people ascend to great altitudes they inhale a rarefied air and their breathing becomes quickened, so in descending to great depths and breathing compressed air respiration, owing to the air being under pressure, should become less frequent and that this occurs is admitted, although in my clinical clerk it was increased. If gas is taken up by the blood and dissolved in it under the influence of great pressure then when decompression is too quickly effected there may be an escape of gas into the tissues, hence the fissures found in the spinal cord, or it remains as globules in the blood and is capable of blocking some of the smaller vessels. Under ordinary circumstances it is easier to take oxygen into our blood than it is to get rid of carbonic acid from our lungs. After a brisk run we experience a difficulty of breathing: we pant. The distress is due not so much to the difficulty of obtaining oxygen as to getting rid of the carbonic acid from the system. The quickened respiratory movements have for their object the ventilation of the lungs. When, therefore, men inside the caissons are working hard and this they do largely aided by the supply of oxygen under pressure an excess of carbonic acid must be correspondingly formed. Under ordinary circumstances the escape of this gas through the walls of the pulmonary capillaries is due to the fact that the tension of the carbonic acid in the blood is greater than that in the air in the alveoli of the lungs. Possibly it may escape just as readily under the increased as under ordinary atmospheric pressure, for as the whole body is under pressure the carbonic acid formed in the tissues must be passed into the blood under a correspondingly increased pressure and will thus be carried to the pulmonary capillaries. In compressed air it is easier to inspire than to expire. The pulmonary capacity is increased, for the chest then measures during inspiration more than it does in ordinary atmospheric air, but it requires a stronger muscular effort to make an expiration, hence its duration has to be longer. Without being able to prove or disprove the statement it is just possible that carbonic acid tends to accumulate in the blood of a caisson worker.

Three theories have been brought forward to explain compressed air illness—(1) carbonic acid poisoning; (2) mechanical congestion of internal organs; and (3) increased solution by the blood of the gases met with in the compressed air and the liberation of these gases during decompression. We have no proof that there is carbonic acid poisoning. Although the men in the caisson carry on their work with great vigour and apparently with less sense of fatigue than on the surface there is no evidence of increased metabolism. In none of my cases was the daily discharge of urea increased above the normal. It is impossible to say whether more oxygen is absorbed; if so, the extent to which it is utilised will depend upon the needs of the system. The air which the workman breathes in the caisson is still atmospheric air. It is not modified in its chemical composition and although the individual so far as respiration is concerned is placed under abnormal conditions vital operations are regulated by the same physical laws as if he were on the surface. If compressed air illness is due to carbonic acid poisoning it ought to occur when the men are in the caisson and not after they emerge from it. That the illness is the result of mechanical congestion especially of the brain is the opinion entertained by Dr. Andrew Smith of New York. In several of the workmen who have died the membranes of the brain have been found deeply congested—a circumstance which may have contributed to the fatal termination. The third theory—viz., that of increased solution of gases in the blood—is that which has met with the greatest acceptance. Dalton's law that the weight of a gas dissolved by a liquid is directly proportionate to the pressure applies to the person of the caisson worker. If in such an individual more gas is dissolved in the blood under compression the excess will be given off after his emergence into the open air. It is the presence of air sucked into the blood that is considered a danger when a large vein at the root of the neck is wounded. There can be little doubt that the escape of bubbles of gas as the blood courses through the capillaries of brain and spinal cord in the decompressed caisson worker is equally dangerous. Paul Bert in his experiments has shown that when animals were exposed to compressed air and were rapidly decompressed several of them died suddenly and at the post-mortem examination free gas was found in the blood and in the right side of the heart. In those animals that were paralysed bubbles of free gas were observed in the spinal blood-vessels and there was in addition subcutaneous emphysema. As to the nature of the gas found in the blood and tissues I am unable to speak with certainty. We are told that carbonic acid is 45 times more soluble than oxygen, but we have no positive proof that it is this gas. It might be nitrogen. The theory that the illness is due to blood first dissolving an excess of gas when the workmen is in the caisson, and that it liberates it when he leaves the cylinder is a possible explanation of why the symptoms come on during or shortly after decompression and of the relief that is obtained by recompression.

As to treatment, preventive and curative, it is absolutely necessary that a sufficient length of time should be passed in the lock, both in compression and decompression, so that the individual is not subjected to the influence of sudden increment or decrement of pressure; one minute for every three pounds of pressure is considered an average period but the length of time might with advantage be increased, for diffusion is slow. The atmosphere in the caisson should be kept as pure as possible and men should not work in the cylinders longer than from two to four hours at a stretch. Only healthy men should be employed. Men who are intemperate in the use of spirits or who are suffering from cold in the head or are weak-chested should not be allowed to enter the caisson. The curative part of the treatment consists in relieving pains in the muscles when severe by means of morphia and when there is collapse by the application of heat to the extremities, stimulants carefully administered, and a hypodermic injection of strychnine when the breathing is impaired. Ergot is recommended with the view of relieving internal congestion and where the symptoms develop quickly and are severe good effects have been obtained by gradually recompressing the patient.

A RETROSPECT OF THE RINDERPEST CAMPAIGN IN SOUTH AFRICA.

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ON April 16th, 1896, I arrived at Mafeking and on the 17th a conference of delegates from the various States was held, Sir Peter Faure, K.C.M.G. (then the Honourable Mr. Faure), Mr. Newton (Resident Commissioner of the British Protectorate), and others being present. At this time, owing to the prompt action of Mr. Hutcheon (the colonial veterinary surgeon) and his staff the rinderpest was being held in check and no fresh centres of disease were then forming. At the conference I proposed: "That rinderpest is a virulent disease and can only be efficiently dealt with by stamping out; that all animals infected with the disease and all animals which have come in contact with such animals should be immediately destroyed, compensation being paid to the owners for all healthy cattle which may have thus been destroyed; and that the respective Governments should be requested to agree to a mutual action in the matter of stamping out and compensation and to contribute a *pro ratâ* share of the expenses incurred." These propositions were seconded by Mr. Van der Plank, M.R.C.V.S. At this time every effort was being made to stamp out the disease and hence experimental work was held in abeyance until later in the year when, Bechuanaland having become widely infected, I formed a camp in the veldt in the Taungs native reserve and began experimentation under difficulties

which may be comprehended when I name the facts that our camp was in the open country, in a highly infected centre far removed from any town or decent water-supply, and in the midst of rebellious natives. Despite these drawbacks, however, a considerable amount of work was done and two methods of inoculation were devised—viz., glycerinated blood followed by virulent blood and the later method which has been so largely adopted in the colony—viz., the use of glycerinated bile followed by virulent blood. In the early part of the following year (1897) I broke up my camp and proceeded to the Victoria Compound at Kimberley where I prosecuted my work for a few weeks and then went down country, forming a temporary camp at Steynsburg for the purpose of supplying virulent blood to the various bile stations then being formed in the Midland and Eastern Provinces. Eventually, late in the year, I was enabled to proceed with my staff to the headquarters at the Institute in Grahamstown.

Among the earlier observations which I was enabled to make was the important one that the blood of animals suffering from rinderpest if kept nearly aseptic at the ordinary temperature begins to lose its virulence about the sixth day after withdrawal from the body. Animals inoculated with infected blood which had been kept for nine days did not contract the disease nor did they acquire immunity. Similarly the nasal mucus from a spontaneous case of rinderpest was found to lose its virulence very quickly if exposed to the air and kept for any period beyond 24 hours. It will be seen that the recognition of this attenuation of virulence by keeping is of the first importance when immunisation is being carried out by means of the bile of animals suffering from rinderpest. The blood of such animals can retain its virulence when quickly dried in a very thin layer, but if it is dried in a thick layer its virulence is destroyed. Thus it is seen that the danger of the spread of the disease from dried masses of material of rinderpest is not very great, but the almost invisible contact of clothes, boots, hands, &c., on which the virus is almost immediately dried forms the greatest and most insidious infective agent. It is unnecessary for me to discuss the whole of the experimental work carried out by my staff inasmuch as this is fully dealt with in my annual reports for the years 1896 and 1897, in the latter of which I have dealt with the subject *in extenso*. I propose at this time to confine myself to the systems of inoculation which have been more or less in vogue and to offer my own views as to the manner under which these act.

I have alluded to the fact that if the virulent blood of animals suffering from rinderpest is kept aseptically for a few days and then mixed with glycerine and kept for eight days its virulence becomes entirely lost. If, however, from 20 to 30 cubic centimetres are used for inoculation by subcutaneous injection into cattle one can inoculate the animals with 0·1 cubic centimetre of virulent blood 10 days later without setting up rinderpest. I have since determined that the plasma and the serum of this blood, even when passed through a Pasteur filter, can be used in this way and I am thus enabled to assert that in the serum of the blood of animals in a late stage of rinderpest there is present in a greater or less degree an immunising substance. When Dr. Koch had discovered the immunising property of fresh bile I determined to endeavour to ascertain whether such bile could not be used in respect to the supposed presence of an immunising substance, because I reasoned that if the blood contained it possibly the bile might also and in greater amount. If the bile were proved to contain it the collection for preparation of bile would be easier than in the case of blood, especially by untrained or unskilled hands. The experiments necessary for this investigation were carried out on a small scale at first and having given excellent results were then proved in the case of several herds, the first being one of 126 animals at Belmont. Since then the method has been almost solely used throughout the Eastern Province. In Cathcart it was entirely used except in the case of one or two herds in which infection had appeared and to which defibrinated salted blood was used as a curative agent although not always with success. Including, however, those animals which died as a result of being spontaneously infected the total loss for the district was only about six per cent. In Somerset East the mortality was six per cent. In two areas the mortality was higher owing to the presence of red-water; in others it was less, as for instance in the Winterberg, where out of 12,000 animals inoculated, many of which were inoculated with a second dose of virulent blood following upon the first, only about half-a-dozen animals died.

The immunity thus produced lasts for several months, but if after the first inoculation with virulent blood a second or even third is made with increasing doses the immunity is greatly increased and its period of duration is very greatly extended. In the case of Dr. Koch's method of inoculation in which fresh rinderpest bile is used immunity is produced as a rule and maintains itself for several months although in some instances its duration is much shorter. The Cape Colony owes a debt of gratitude to Dr. Koch for this most important discovery, which was the first real step towards protective inoculation and which, with the increased light that experience can give, will probably be made use of at future dates in other countries. Around this method controversy has been waged, and although I have hesitated hitherto to give too emphatic utterance to my convictions I feel that now that the public have got beyond the reach of panic I may in justice to myself place before my medical brethren the conclusions at which I long ago arrived.

It may be remembered that Dr. Turner and Dr. Kolle in a paper communicated to the *South African Medical Journal* asserted that after the inoculation of animals in an unaffected area with the bile of animals affected with rinderpest the disease could not follow as a result of that inoculation. Their reason for this statement was that they held "that the gall itself cannot communicate rinderpest" and they added that "this is a fact much to be regretted, because were this possible then the immunity conferred by the bile would be of much longer duration than it has been proved to be." Veterinary surgeons throughout South Africa as a result of their extended experience in the field are unanimously opposed to this view as they hold that in very many cases the disease is conferred by inoculation with fresh rinderpest bile. My own experience in the field and the experimental work carried out not only in the Institute but also in the Victoria Compound at Kimberley and elsewhere admits of my saying that bile can and does produce rinderpest but certain samples of bile do so more than others. It has to be remembered that the bile used for the Koch method is required to be a deep-bottle-green-coloured bile with a white froth. I have found that if such a bile is used fresh it does not always produce rinderpest, but I have also found that in some cases such a bile may entirely fail to confer any immunity and my experience in this regard agrees with Dr. Koch's own utterances. On the other hand, when I have used discoloured bile, brownish, yellowish, or reddish *fresh*, it has almost invariably produced rinderpest in some of the animals inoculated.

In order therefore to arrive at an explanation of these facts let us return to Dr. Turner's paper. He states that Dr. Koch considered that bile acted in virtue of its containing "the organism in full activity but this activity was restrained by the presence in the bile of a chemical substance probably of an albuminoid nature." I fully concur in this view, but I hold that, in addition to the inhibiting substance bile also possesses a passive special immunising substance. Dr. Koch mixed slaughterhouse bile with virulent blood and thereafter inoculated animals without setting up rinderpest, but no immunity resulted from the inoculation. From this it is evident that the inhibiting substance is germicidal and is present in healthy bile. In my experience discoloured bile from animals suffering from rinderpest produces rinderpest if used fresh, hence I conclude that the inhibiting substance in the bile tends to disappear as the disease advances. In using glycerinated biles I have found that early brilliant-green biles possess very little immunising substance, but the deadly discoloured biles possess it in the greatest amount, hence for the preparation of glycerinated biles I prefer that which has begun to become altered in its colour.

From a consideration of the above conclusions it may be seen that the inhibiting and immunising substances of bile are usually present in an inverse ratio. Now, in the Kimberley Compound the biles selected were invariably early biles (biles which had not begun to alter) and in regrad to these I should expect to find that on the inoculation of such biles rinderpest did not always follow. Moreover, I wish to emphasise my previous discovery that the virus tends to attenuate by keeping, and as this applies equally to bile I have kept virulent biles for a few days and inoculated them with safety. Now, it has to be remembered that the bile could not be kept in the field and hence it was used with

the least possible delay. Here then lies the true explanation of the fact that rinderpest has been proved to follow inoculation with fresh bile. I fully concur with Dr. Krause in this respect.[1] Dr. Turner believed that glycerinated bile possessed only a feeble immunising power and he stated that when animals inoculated with it were 10 days later inoculated with 0·2 cubic centimetres of virulent blood 70 per cent. of these animals died. Seeing that Dr. Kolle inoculated 10 of my Belmont herd with virulent blood of his own selection and received from me at his urgent request permission to do so and moreover that not one of these ever showed the slightest illness as a result of this inoculation, and since this method has also been widely tested throughout the colony, it seems to me that Dr. Turner did not use glycerinated bile as I use it or as farmers have used it. A late rinderpest bile when glycerinated possesses a powerful passive immunising action. At the Sundays River estate the natives would not inoculate and an enormous mortality has ensued. The manager of the estate, Mr. Goldhawk, inoculated his own cattle, about 400, with glycerinated bile only, repeating it at intervals of one or two months and, although they were fully exposed to infection, not one of them became affected. None of these animals were inoculated with virulent blood. Were South Africa at a future date to become threatened by invasion of rinderpest from the North again I would strongly recommend that the bile from spontaneous cases dying within the area of infection should be used to produce glycerinated bile and that inoculation with this material should be proceeded with in a broad zone or belt well outside of the infected area so as to form a cordon of passively immunised animals and that within this area and gradually overtaking it inoculation should be carried out by Dr. Koch's method. By this means in a gradually extending circle, the infected area being the centre, all animals would be first inoculated with glycerinated bile which cannot possibly confer the disease and subsequently according to Dr. Koch's method with fresh bile. At the recent juncture it was impossible to start new bile stations and hence I concurred in having recourse to serum only, as there being then very little disease in the colony and serum being available in great quantity it was the cheapest way of dealing with any small outbreaks which might arise. At the same time I think it right to state that in any serum and blood inoculation the immunity produced is of the slightest and can be readily broken down in the presence of spontaneous infection unless during the course of inoculation a severe febrile reaction has been produced. In the earlier work with serum Dr. Turner and Dr. Kolle were convinced that serum could be readily used as a curative agent for herds in which spontaneous infection had appeared, and although I was strongly opposed to this view I was in the minority at the former conference. Extended experience has, however, now shown that where animals acquire the disease spontaneously and have not previously been inoculated with bile the effect of even very large serum inoculations is not very great, so much so that the Colonial Veterinary Surgeon is now of opinion that the cheapest manner of dealing with such animals is to destroy them. I have referred to mortality following upon rinderpest inoculation as being due in some cases to the complication of red-water or "Texas fever." I have dealt with this in a detailed report.[2] Meanwhile, however, I may state that if healthy cattle which have been running on a red-water veldt and through having been bred in the area are either salted or immune are used to be infected with the blood from animals infected with rinderpest they take the disease in all respects like other clean cattle. Examination of their blood may, and usually in my experience does, fail to show any red-water parasites; nevertheless, if susceptible animals are inoculated with such blood they develop both rinderpest and red-water and this simultaneously. Curiously enough the parasite in such circumstances varies from the form described and recognised, and forms smaller or larger, sometimes vacuolated, intra-globular parasites conforming to those described by Dr. Turner and Dr. Kolle as having appeared at the Kimberley Compound and among the cattle inoculated by the former at Robben Island. I have followed up the life-history of this form of the parasite and have shown that it eventually develops in susceptible animals into the well-known form of the "Texas fever" organism. It is liable to appear in inoculated animals whether after bile and blood or serum and blood and hence in all future inoculations from the blood it will be necessary to make use for the supply of virulent blood of those cattle only which are known to have come from areas which are absolutely free from that disease.

As regards the results which have followed inoculation with glycerinated bile followed by virulent blood my attention has been directed to a statement by Mr. Maberley in THE LANCET of Nov. 5th, 1898, and inasmuch as Lord Lister seems to have made these statements the basis of his remarks upon rinderpest I feel that in justice to myself a few definite statements which can be easily verified by anyone may serve to show the utter fallacy of Mr. Maberley's remark that "the hopes entertained at one time of the method of glycerinising bile as advocated by Dr. Edington have proved fallacious." In the Cape Colony inoculation (of one sort or another) has been practised in 57 districts. Of these inoculation by glycerinated bile followed by virulent blood has been carried out in 23 districts. In 11 other districts it has been carried out to a greater or less extent. The total number of cattle inoculated by it in the 23 districts where it only has been used amounts to 393,777. The total mortality in these districts has amounted to 32,464 animals, or 8·24 per cent. In one such district (Middelburg) the young newly-born stock on the farm of Mr. Struben became affected by rinderpest 15 months after the inoculation had been completed. Although these were running with the others of the stock not one of the latter became affected, thus showing the immunity to have been quite perfect at 15 months after the inoculation.

Grahamstown, South Africa.

[1] South African Medical Journal, June, 1898.

[2] Red-water, Texas Fever, or Tick Disease; an Investigation into its Nature, Causation, and Preventive Inoculation. With illustrations. Agricultural Journal, No. 12, June 9th, 1898.

PAROXYSMAL SNEEZING AND ALLIED AFFECTIONS.[1]

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PAROXYSMAL sneezing and affections of a closely allied character are very common. The complaint varies a good deal in severity and in the character of the symptoms. Sometimes it is only a trivial ailment; at other times it gives rise to considerable inconvenience, while in certain instances it renders life miserable for a portion of the year, if not for the whole year round. The characteristic symptoms are sneezing and running from the nose. Many other symptoms are apt to be associated with these in different cases, such as stoppage of the nasal passages, smarting, burning, or itching in the nose or conjunctiva, running at the eyes, various discomforts of the throat, and, most important of all, asthmatic symptoms. In dealing with this subject I propose to keep as far as possible to the practical side of the question and to give the results of my own experience and the views founded on such experience. It is not my aim to give a *résumé* of all that has been written on the subject and I have no new theories to advance. For the purpose which I had in view I carefully looked over the notes of 112 cases which have been under my care. These notes form sufficient material for a brief sketch of the chief forms of the complaint. They supply some indications of the etiology of the disease and they show how far the various modes of treatment which were tried were successful or otherwise.

The cases which we include, for want of a better name, under the term "paroxysmal sneezing" are met with under many varieties in respect of severity of symptoms, of the prominence of particular symptoms, and of the exciting causes of the paroxysm. The term "hay-fever," often employed to denote this complaint, is, I think, best reserved for the particular variety indicated by the name, and "vaso-motor rhinitis," a name recently introduced, has the defect of committing one to pathological views which may be right or wrong, so that on the whole, I think, "paroxysmal sneezing" is the best designation. A common type of case is that of the individual who, every day or nearly every day, has an attack of

[1] A paper read before the South-West London Medical Society on Jan. 11th, 1899.

sneezing and running from the nose lasting from a few moments to half an hour or more. The attacks mostly recur at about the same hour, the morning just after rising from bed being the commonest time. Such persons generally keep free from trouble till the usual time next day, though liable to occasional sneezing attacks from certain exciting causes, such as dust, changes of temperature, &c. Another type is that of the person who is subject to frequent attacks of sneezing and running from the nose at all times of the day or night from various causes or without assignable cause. Another set of people describe attacks lasting from some hours to some days, with exacerbations and remissions. Such attacks may recur every few days, once a week, or at longer intervals: "very bad colds" they usually call them, coming on suddenly and going off suddenly—"as bad as I can be one day and perfectly well the next," as one patient said. Many of the sufferers from any form of the complaint say that they are worse at certain periods of the year, but there is one well-known class of persons who suffer mainly or exclusively at a particular season—viz., for some five or six weeks in June and July—hay-fever patients, in fact. I say mainly or exclusively, for I think that it is very rarely indeed exclusively. These hay-fever patients almost always suffer from a more or less marked liability to attacks of sneezing at all times of the year, but they suffer especially at this period of the year from the disease and its accompaniments and often with an intensity and virulence hardly met with in any other class of cases.

Sneezing is the prominent symptom in most cases. It is generally preceded by a tickling or irritation of the nose which, however, the sneezing fit does not always relieve, and in a general way patients do not get the satisfaction out of a sneezing attack which usually accompanies this physiological reflex in the normal condition, and in bad cases it shakes and exhausts the patients so that they perfectly dread the attacks. Some of these patients sneeze a great number of times in succession. Thus one woman who had particularly bad attacks on getting into bed at night and who counted the sneezes at my request, sneezed one night 232 times close together and 72 times after a short interval, and on another night she sneezed 294 times right off. In many cases the profuse thin sero-mucous running from the nose is the most prominent and troublesome feature of the complaint. Accompanying, as it does, the sneezing attacks it may continue after the sneezing has subsided and it may occur independently of any sneezing. The discharge may be very copious and may drip from the nose when the head is bent forward and it may be the sole symptom for which the patient seeks advice. The number of pocket-handkerchiefs used is often mentioned as a measure of the trouble. Thus I find notes of from 30 to 40 handkerchiefs a week being used in one case and 12 or 13 a day in another. The discharge is mostly periodical, occurring every day, often at the same hour, and it may be several times a day. The attack may be ushered in by frontal or supra-orbital pain, a feeling of "pins and needles" across the bridge of the nose and of irritation in the nose. Some sneezing generally marks the onset but sometimes there is little or no sneezing. Various exciting causes—dust, cold air, &c.—may produce the attack. This condition has been called "rhinorrhœa" and remarkable cases have been recorded of an almost continual flow from the nose, amounting to many pints a days, for days and weeks together. I would not say that all cases without exception of rhinorrhœa, or watery discharge from the nose, are allied to paroxysmal sneezing, but with very few exceptions they are. In some cases it is only on careful inquiry that you get any history of sneezing, the patient attributing little importance to it in comparison to the main trouble—the running from the nose. Every gradation, however, exists between one of these cases of rhinorrhœa with only a slightly marked tendency to sneeze and an ordinary case of paroxysmal sneezing.

Although sneezing and running from the nose are the most characteristic symptoms there are many other symptoms which may be present in greater or less degree. There may be a feeling of intense tickling, irritation, or itching in the nose, sometimes confined to one passage. Sneezing may not relieve it and sometimes there is a constant desire to sneeze without the ability to do so. Stoppage of the nose is common. Most patients describe a stoppage at the onset which is relieved by sneezing and running. Many patients have a chronic obstruction of one or both passages more or less marked, but this is a separate matter from the intermittent stoppage of which I am speaking. The ocular symptoms are extremely marked in some cases. The eyes stream with water, one eye sometimes more than the other, and there may be intense irritation or itching of the eyes and a constant desire to rub them. The eyelids may even become puffy and œdematous. Itching and irritation of the inner canthus of one or both eyes is the earliest sign of an approaching attack in some persons. Headache is a common symptom. The pain is mostly referred to the frontal or supra-orbital region and is dull and heavy or neuralgic in character. Some describe the pain as much relieved when running at the nose begins. Irritation and itching of the soft palate and fauces are complained of in many cases. There is one very important group of symptoms from which these patients frequently suffer—viz., oppression or tightness of the chest, wheezing, paroxysmal cough, or definite asthmatic attacks. Of my patients I find that 56, or exactly half, suffered more or less from these asthmatic symptoms. In the great majority of them the paroxysmal sneezing existed for months or years before the asthmatic symptoms appeared. In a few the two sets of symptoms seemed to develop simultaneously. In three of my cases I noted that the asthmatic symptoms existed for some time before the sneezing. Many patients described each attack as being habitually preceded by sneezing. This association of paroxysmal sneezing and asthma has long been recognised. The patients whose cases form the subject matter of this paper were, of course, all more or less pronounced sneezers, but if you were to inquire into a series of cases of pronounced asthma you would get the same evidence of the striking association of this disease with paroxysmal sneezing. It is only on careful inquiry that you will elicit the fact, as asthmatic patients attach little importance to the sneezing symptoms, but in almost all "asthmatics" you will get a present or past history of liability to attacks of sneezing.

Many subjects of paroxysmal sneezing describe the attacks as coming on without any cause that they can assign. Women sometimes find that their attacks are worse at the menstrual periods. In a great many cases the attacks recur at particular periods of the day. The morning is the usual time and most patients have an attack on getting up in the morning. Some begin to sneeze immediately they awake in the morning. Attacks may recur regularly at a particular period of the forenoon or the afternoon. Some always have an attack on getting into bed at night. One of my patients woke up regularly at 4 A.M. with intense irritation in the nose followed by sneezing. One patient always sneezed after meals. Some patients were always worse in London and some were worse in the country; some were worse in winter and some were worse in summer. Most patients were affected by going into bright sunshine. Dust is the most frequently mentioned cause: all kinds of dust, in- and out-door, some being affected more by one than the other. Change of temperature is often assigned as a cause, such as going into hot rooms or out into the cold. Hay, of course, is an exciting cause in many. But the idiosyncrasies of patients in respect of the exciting causes are, as we know, extraordinarily varied. In my notes I find specified such causes as tobacco smoke, the atmosphere of the Underground Railway, roses, sweet peas, lilies, any kind of flowers, bird-seed, linseed cake, furs and skins of animals, the proximity of a cat (especially a Persian), a cold bath, a hot bath, using soap for washing the face, brushing the hair, drinking cold water, the act of talking and singing, violent exercise, &c.; but the possible exciting causes are innumerable and the foregoing list could be added to indefinitely from the experience of patients of this class.

I may now pass from the exciting causes of the paroxysm to the etiological conditions underlying this affection. Looking through my own cases I find that there are 59 males and 53 females, so that the sexes are pretty evenly divided. The cases were of all ages, from three years up to 68 years of age, the majority being between 20 and 40 years. It is of more interest, however, to see at what age the complaint first showed itself, and in 94 cases I have a note on this point. I find that 16 began before 10 years of age, some of them in infancy. 27 cases began between 10 and 20 years of age, 21 between 20 and 30 years, 18 between 30 and 40 years, and only 12 after 40 years of age. 51 cases out of 94, or 54 per cent., commenced before 25 years of age. It is clear that the disease usually develops in the earlier period of life, but it may

begin at any age, occasionally at a very advanced age. That the disease is hereditary and that it runs in certain families is very clear. In many of my cases there is a history of similar troubles in parents and grand-parents and various collateral relations. I have already alluded to the close connexion between paroxysmal sneezing and asthma and this is well illustrated by the history of asthma in members of the same family. In 33 per cent. of the cases I was able to get a history of either paroxysmal sneezing or asthma, or both, in one or more members of the family of the patient.

I now come to an important matter—viz., the condition of the nasal passages in these cases. In a certain number of my cases excessive sensitiveness of the interior of the nose when touched with a probe either at certain points or throughout was noted. In many cases, I think in the majority, no such hyperæsthesia was present. Apart from this I find that in the 112 cases there existed some pathological condition of the passages in 104, or nearly 93 per cent. This is a large proportion and I might admit that possibly it is a larger proportion than would be found in the same number of cases taken at random, because I think it possible that I might get a preponderance of cases in which certain symptoms, such as chronic nasal obstruction, were present or in which there was known to be some nasal disease or abnormality. I doubt, however, if this makes a very great difference, as certainly the vast majority came simply on account of the sneezing and running from the nose. At any rate, the proportion in these cases was as I have given it. The following are the various abnormalities noted, and I should like to say that under the head of "septal deflections, crests, and spurs" I do not include every slight deviation or inequality of the septum, for these are extremely common in all persons, but only such as cause obstruction to respiration or such as bring some part of the septum into close proximity or firm apposition with the turbinated bodies. In 40 cases marked deflections, crests, or spurs were the only pathological conditions noted. In 33 cases hypertrophic rhinitis was the chief feature noted, in 12 of which septal deformity coexisted. In 20 cases mucous polypi were present, combined with septal deformity or hypertrophic rhinitis in several cases. Enlargement of the middle turbinal was the chief condition noted in five cases and adenoid vegetations in five cases. In one case there was a remarkable atrophic condition of the mucous membrane and turbinals, not however of the nature of fœtid atrophic rhinitis. There was a profuse, thin, watery discharge in this case and complete anosmia. It will thus be seen that septal deflections, crests, and spurs were the most frequent abnormality, being present not, as I have already said, in a slight or trivial degree, but in a marked degree in 40 cases as well as in combination with hypertrophic rhinitis, mucous polypi, or adenoids in at least 20 other cases. In 22 cases a crest or a spur on the septum was noted as being jammed firmly against the inferior turbinated body. In four of these cases the irritation was felt almost exclusively on the affected side and the running was chiefly from that nostril.

Although there can be no doubt as to the frequency of pathological conditions in the nose in cases of paroxysmal sneezing the question arises whether they are in any degree the cause of the symptoms and how these pathological conditions can give rise to such symptoms. It is well known that such conditions as septal deflections, hypertrophic rhinitis, mucous polypi, &c., exist very frequently without any paroxysmal sneezing and, in fact, it is only in exceptional cases that such symptoms arise. It must be admitted, also, that hypertrophic rhinitis may well develop during the course of the complaint as a result of the frequent congestive swelling which takes place, though, of course, in many of my cases where the symptoms were comparatively recent and the hypertrophy well marked I could exclude this view. I think, too, that in some cases of mucous polypi it was probable that paroxysmal sneezing existed before the development of the polypi and it seems that the complaint favours the growth of polypi. This, however, is the exception. There can, in fact, be no doubt that various pathological conditions are present so frequently in this complaint that in some way or other they unquestionably form an important etiological factor in a large proportion of cases, but, of course, only one factor, since the complaint may arise independently of them, and all these conditions frequently exist without any symptoms of the complaint.

The question then arises, What other factors enter into the causation? The most constant phenomena of the complaint are sneezing and certain vaso-motor and secretory disturbances in the nasal mucous membrane as well as in the conjunctiva and lacrymal apparatus. All these phenomena are capable of being reflexly excited. Sneezing is a familiar nasal reflex. The increased flow in coryzal conditions is partly due to increased glandular secretion and partly to serous transudation from the nasal mucous membrane. It is in part the result of vaso-motor disturbances but not wholly so. The vaso-motor and secretory functions are under the control of the nervous system and are reflexly excited by familiar causes. In the complaint which we are considering all these reflexes are excited by causes which would not act on the normal individual. We may therefore suppose that in these cases there is an undue excitability of certain nerve-centres, owing to which they are called into action by influences which would not otherwise affect them. This may or may not be a part of a general neurasthenia inherited or acquired; in some cases it certainly is, for, as we know, a fair number of these patients are what we term neurotic, though by no means all. It also seems probable that prolonged irritation arising from certain abnormal conditions in the nose may set up this morbid excitability in the nerve-centres connected with the sensory nerves of this region, though here also we are compelled to assume a predisposition in the individual, since intra-nasal disease as a rule does not set up paroxysmal sneezing. That there is this predisposition in many cases is evidenced by the frequency with which we get a history of similar complaints in many members of the same family. This is all I shall say by way of suggestion in relation to this question, merely adding that a good many of my patients date the onset of their symptoms to an attack of influenza which is well known to be capable of disturbing the nervous system in various ways.

I have already alluded to the frequency with which asthmatic symptoms occur in subjects of paroxysmal sneezing and of the close relationship between the two complaints. On this point I may remark that asthma is admitted to be sometimes excited reflexly by nasal disease or irritation. It has been shown by experiments on animals that contraction of the bronchial muscles can be set up by irritating the nasal mucous membrane (François-Franck, Lazarus). In certain cases of asthma it is possible to cause a temporary abatement of the symptoms by the application of cocaine to the nasal passages. This is a fact which I have repeatedly verified for myself. It is probable, therefore, that in many cases the asthma associated with paroxysmal sneezing is of nasal origin and is reflexly excited by nasal irritation, at any rate in the first instance, for when once established there is reason to believe that asthma may be excited by various causes other than the original cause. In some cases the asthma is not a reflex result of nasal irritation but merely a coincident disturbance in the lower part of the naso-bronchial tract. It is probable that in some cases of asthma associated with paroxysmal sneezing the irritants in the air which set up the paroxysmal sneezing act directly on the lining of the bronchial tubes and so excite asthmatic symptoms. I have already alluded to paroxysmal cough as a not uncommon symptom in subjects of paroxysmal sneezing. Cough is another undoubted nasal reflex; it is well known that paroxysmal cough is often a precursor of asthma and it may replace an asthmatic attack.

Before speaking of treatment it will be well to consider for a moment the course of the complaint in its various forms if left to itself. The course of the cases is extremely variable and uncertain and this must be borne in mind in estimating the value of treatment in paroxysmal sneezing. Some cases continue for years or throughout life without any marked change. Cases may get well or undergo marked increase at any period of life. An attack of influenza sometimes causes marked exacerbation of the symptoms. Patients who get well may relapse again after a variable period. There is in most cases apt to be an abatement of the symptoms after middle life, but there is no uniformity in this respect. Some suffer right on into old age. Changes take place, too, with regard to the influence of exciting causes. Certain patients, for instance, state that at one time hay used to affect them severely but that latterly they are no worse in the hay season than at other times. A change in the character of the symptoms is not infrequently noticed, the sneezing symptoms subsiding and an aggravated condition of rhinorrhœa becoming established. Asthmatic symptoms may set in at any time in the course of the complaint. They usually appear, if at all, in the early period within the first two or three years and cases which have

gone on several years without any symptoms, such as tightness or oppression of the chest or wheezing or paroxysmal cough, are likely to escape, but there is no certainty. Once asthma has definitely appeared it may outlast the coryzal symptoms, the latter disappearing completely while the asthma becomes confirmed. Sometimes the asthmatic and the sneezing symptoms alternate in a curious way.

I must now pass to the treatment of paroxysmal sneezing. I have carefully studied the notes of my cases on this point and I shall endeavour to state the conclusions which I believe may fairly be drawn from a study of them. Only a certain proportion of my cases were fully available for this purpose. Some cases I only saw once and treatment was either not begun or not pursued; others were kept under observation for a short time, too short to judge of the final result but sufficiently long to furnish indications as to the immediate effect of treatment and the influence of palliatives. Some of the cases are too recent to speak of them as "cured" or "permanently relieved," as until at least a year has passed from the cessation of treatment I do not think we should begin to use these terms.

My remarks for the present apply only to the coryzal symptoms; at the end I shall say something of the asthmatic symptoms. The first and most important fact which a study of my cases proves is that a large number of these cases can be cured or so much relieved as to be practically cured, and the second is that this can only be attained by local treatment, by remedying the various morbid conditions which I have already enumerated as being present in so large a proportion of the cases. But for this end the local treatment must be thorough and effective. Now I do not wish it to be understood that every patient suffering from paroxysmal sneezing in whom intra-nasal abnormalities exist should be treated operatively. It depends on the severity of the symptoms and to some extent on the operation required. Some of these patients suffer comparatively little trouble and do not need to be subjected to operation; but if the symptoms are severe, or if for any reason whatever we desire to ensure something approaching a permanent cure, a thorough radical treatment of such intra-nasal morbid conditions as are present is essential. Now we learn as much from studying our failures as we do from studying our successful cases. I have had plenty of failures, but a close scrutiny of them convinces me that the cause of the failure was almost always due to the inadequacy of the treatment. This was not, of course, always my fault. A patient will submit to a few applications of the galvano-cautery when the use of the saw to remove a spur or crest may be objected to, or you may be permitted to remove a few mucous polypi with the snare when the proposal to operate on a coexisting deflected septum will not be accepted, and so on.

There are some cases, the number of which is, however, limited, in which treatment by the galvano-cautery (or escharotics such as chromic acid) will be sufficient. I can only find two cases which could be said to be in any sense cured by this treatment. There was more or less relief noted in 10 cases. Against these I find 12 cases in which no improvement was obtained. Some of them were afterwards improved or cured by other measures. The galvano-cautery is especially indicated for cases where the sole condition is a chronic turgescence or very moderate hypertrophy of the inferior turbinal and where by its use we may be able to prevent contact between these bodies and the septum even when these bodies become congested. It is also useful for cauterising excessively sensitive spots in the mucous membrane, if any such are present. When spurs or crests project from the septum against the turbinals they must be sawn off. Deflections of the septum of all kinds must be so treated that the passage shall be left free for respiration and all possible contact with the turbinals, especially the inferior, shall be prevented. For this purpose the turbinals themselves may have to be partly or wholly removed. When the inferior turbinals are hypertrophied the snare and punch forceps must supplement or replace the galvano-cautery and in some cases complete removal of one or both inferior turbinals is the only plan to adopt, and no theoretical considerations must be allowed to interfere with this procedure if it is desired to relieve the patient. I am convinced of this. If mucous polypi are present they should, of course, be removed and more or less alleviation of the symptoms may be expected, but the patient will not be cured, and perhaps not much relieved, unless other co-existing conditions, such as deformities of the septum or hypertrophied turbinals, are treated. I have collected 31 cases in which I was able to carry out treatment on the lines now indicated. Among these there appeared to be only one case in which there was no relief of the symptoms. 25 cases were completely cured or so much relieved that their symptoms gave them no particular trouble. Some have now continued so for several years. Four were relieved but still continued to suffer in a minor degree from their former trouble. One, though considerably relieved for some weeks after the operation, was lost sight of and cannot therefore be counted. I have a few other cases which promise equally well with the foregoing, but as a year has not elapsed I prefer not to include them.

In contrast with these cases are those in which for various reasons only medicinal treatment was employed. No one admits more freely than I do the presence of a neurasthenic element in many of these cases. I have prescribed all the usual nervine and other tonics which one gives in such cases. Many of the cases operated upon have had a trial of drugs and local applications for a time. I have frequently seen considerable relief as the result of drugs, but anything which could be called a cure—any case in which drugs could be left off and permanent freedom from symptoms be anticipated—I unfortunately have not seen. Still, a great deal of relief can be got from the use of general and local remedies, and for various reasons it is the only form of treatment one can employ in many cases, and they may be usefully employed in conjunction with other modes of treatment. Few complaints have had more remedies vaunted for their relief, and probably most of them are occasionally useful. I need not enumerate them, nor need I refer to the treatment of any general neurasthenic condition which may be present or to such obvious measures as protecting the patient from the known exciting causes by change of residence, &c. I shall content myself with referring to a few remedies which I most frequently employ.

The internal remedies which I believe to be most often useful are quinine, belladonna, arsenic, and iodide of potassium, but I confess that I know of no reliable indications for giving preference to one or other of these drugs in particular cases. I give quinine in moderate doses of from one to two grains three times a day and it certainly sometimes relieves, but more usually I combine it with iodide of potassium or arsenic. Belladonna is often useful and occasionally gives striking results. I generally prescribe the extract in a dose of from one-twelfth to a quarter of a grain two or three times a day. Arsenic is, I think, useful in many cases, though less so than belladonna. A prescription which I employ very often is a pill containing one grain of sulphate of quinine, one-sixteenth of a grain of iodide of arsenic, and one-twelfth of a grain of extract of belladonna, to be taken three times a day, the arsenic and belladonna being increased according to tolerance. I have seen this pill taken through the hay season by patients with marked alleviation of the usual symptoms. Iodide of potassium is especially useful in cases associated with asthmatic symptoms and I always lead off with it in such cases in full doses of, say, 10 grains three times a day; I sometimes combine with it arsenic and quinine.

The local remedies which I have most frequently used are cocaine and menthol. Cocaine, as is well known, if applied at the onset of a paroxysm generally gives remarkable relief, lasting an hour or two. A 4 per cent. solution is sufficient and may be applied with a spray apparatus or on a pledget of wool soaked in the solution. A solution of cocaine in hazeline is sometimes more efficacious. Some caution is necessary in prescribing cocaine as toxic effects are sometimes caused and the prolonged use of cocaine seems to set up a certain kind of nervous irritability. Bearing this in mind, however, and using some judgment we need not discard this remedy which acts as a valuable palliative in severe cases. Menthol is a useful application in many cases and has not the disadvantages just mentioned with regard to cocaine. It dissolves well in a liquid paraffin preparation such as paroleine. A 1 per cent. solution is generally strong enough. It may be used as a spray or may be applied directly on cotton-wool. Menthol-camphor is also useful in 1 or 2 per cent. solution in paroleine. While cocaine should only be used to check severe paroxysms menthol and menthol-camphor may with advantage be used several times a day both during and between the paroxysms.

In conclusion I must say a few words with regard to the effect of intra-nasal treatment upon asthmatic symptoms when these are associated with paroxysmal sneezing. In the majority of cases the asthmatic symptoms were relieved

more or less by the line of treatment which relieved the nasal symptoms. In the 31 cases already referred to about half were subject to asthmatic symptoms, either some feeling of tightness or oppression of the chest, some wheezing at times, or definite attacks of asthma. I can only find one who though much relieved of his nasal symptoms got no relief from his asthma which indeed steadily got worse. On the other hand, some though relieved were by no means relieved to the same extent as in respect of the nasal symptoms. I suspect, if we could only know it, that we relieve the asthmatic symptoms in so far as these depend upon reflex excitation from the nose, but it is impossible to say how far this is so in any particular case. As I have already said, it may be so in the early period of the case and not so later. The general conclusion which I have formed on this matter is that in children and young subjects affected with paroxysmal sneezing there is a much better chance of relieving or curing the associated asthmatic symptoms than in older subjects; that the shorter the period during which the asthmatic symptoms have been present and the less pronounced they are the more likely we are to relieve or cure them by the same treatment which relieves or cures the nasal symptoms. Still our prognosis with regard to asthma in these cases should always be guarded.

Upper Wimpole-street, W.

PARALDEHYDE IN ASTHMA.

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As far as I have been able to find out, Dr. Mackie[1] of Elgin was the first to suggest the use of, and to use, paraldehyde for the relief of asthma. "The fact that paraldehyde is a sedative largely eliminated by the breath" led him to try its effect in the spasm of idiopathic asthma. He administered it in a number of cases with uniformly successful results and found that it speedily relieved the spasm and induced sleep. My attention was drawn anew to this a few months ago and since then I have given the drug in a fairly large number of cases of idiopathic asthma and other forms of spasmodic dyspnœa and my experience confirms that of Dr. Mackie. No drug in my hands has given such satisfactory results. In the treatment of hospital out-patients suffering from asthma morphine hypodermically is out of the question and it is not usually advisable to prescribe chloral in such cases. Paraldehyde is absolutely safe. It not only relieves the spasm but it induces tranquil refreshing sleep without any objectionable after-effects. Besides, no evil results follow a prolonged use of paraldehyde; it does not give rise to a habit, and on this account it is a much more desirable drug than morphine or chloral. That it has hitherto not been much used in the treatment of asthma one may safely conclude from the fact that neither in Allbutt's "System of Medicine" nor in "Twentieth Century Practice of Medicine" is it mentioned among the drugs given as useful in the treatment of the disease. I venture therefore to think that the following short notes of a few of the cases in which I have used it may prove interesting and worth recording.

CASE 1.—The patient was a woman, aged 24 years, who had suffered from asthma for four years. The nightly attacks of dyspnœa had always been very severe and protracted. Chloral gave no relief. She had derived most benefit from a mixture containing iodide of potassium, tincture of lobelia, and solution of hydrochlorate of morphia; but this combination and many other remedies gave relief only for a short time and her condition became serious. She was losing flesh, cyanosis was constant, and she was gradually growing weaker. On Sept. 30th, 1898, she was ordered half a drachm of paraldehyde every night at bedtime. When seen a week afterwards she said that since taking the paraldehyde her nights had been very good, that she had had only one attack, and it was a very short one. The dose was doubled and then the attacks ceased. On Jan. 6th, 1899, the note in the case-book says: "She continued to take the paraldehyde up to Nov. 18th and has taken none since. Her nights are invariably good. Now and then she has a slight wheezing attack which lasts only for a few minutes. She has put on flesh and her colour is quite rosy."

CASE 2.—The patient was a woman, aged 37 years, who had been ill for three months; there was a family history of phthisis. At first the attacks of asthmatic dyspnœa came on chiefly after meals and for a time they were relieved by iodide of potassium and tincture of lobelia. In this case and in several others an occasional dose of a carminative mixture seemed greatly to increase the effect of the other remedies. Very soon the latter had little or no effect, she became much worse and the dyspnœa and laboured breathing prevented sleep. Half a drachm of paraldehyde, repeated in an hour, gave tranquil, refreshing sleep. She continued to take paraldehyde for several weeks and the last note of her case says: "Her nights are good and she reports herself to be ever so much better."

CASE 3.—The patient was a woman, aged 36 years, who had suffered from bronchitis off and on for nearly three years. An uncle was asthmatic. She had had a severe attack of influenza in January, 1898. She was first seen on Nov. 15th and she stated that for three months she had suffered from attacks of dyspnœa coming on suddenly during the night, usually about 1 A.M.; she awoke struggling for breath, the attack, with much wheezing and laboured breathing, lasting often for 12 hours or longer. She had had a very bad attack the night before her visit and she was still decidedly cyanotic, but on examination no adventitious sounds were heard in the lungs and the heart was normal. A mixture containing iodide of potassium was ordered to be taken during the day and paraldehyde at bedtime. When next seen, on Nov. 22nd, her report was: "I feel much better, I sleep all night and wake feeling so refreshed." On Nov. 29th the report states that a severe attack occurred on the night of the 26th, the usual dose of paraldehyde induced sleep only for a very short time, and although sleep for the rest of the night followed a second dose the asthma recurred when she awoke and continued till the following evening. She was last seen on Jan. 3rd, and she then stated that she was quite well, that she had not taken paraldehyde for a week, and that she now slept well all night. There had not been an attack since the one mentioned above.

CASE 4.—The patient was a man, aged 44 years, who had suffered from asthma for nearly two years before coming under observation. At first the spasmodic attacks occurred about 2 A.M., but lately they had come on frequently during the day. The lungs were emphysematous and he also had got a mitral systolic bruit. At first he was given paraldehyde and nothing else. More sleep was the result but it was somewhat restless, and he often awoke wheezing, coughing, and retching. He was then ordered a mixture containing iodide of potassium and tincture of lobelia to be taken during the day and the paraldehyde at bedtime. Under this he improved immensely, and a note made after adopting this treatment says that "the nights are good and breathing easy during the day. Has been at work for a week."

CASE 5.—The patient was a woman who had suffered from asthma for four years. Her father had been asthmatic for 20 years and six of his eight children suffered from the same disease. The nocturnal paroxysms were very severe and in addition to the usual characteristic symptoms there was a patch of catarrhal pneumonia at the base of the left lung. She was ordered an expectorant mixture with iodide of potassium during the day and paraldehyde at night. On each of the first two nights almost immediately after taking the paraldeyde she fainted but slept quietly all night. After that the drug did not cause even a feeling of faintness but gave the patient quiet nights and there was no recurrence of the asthmatic attacks.

CASE 6.—The patient was a woman, aged 47 years, stout, flabby, and very neurotic; she was first seen on Nov. 5th, 1897, when she stated that she had suffered, off and on, for several years and had been gradually getting much worse. Her father was asthmatic and so was a sister who, she said, died in an attack for which she was given morphia hypodermically. At her first visit this patient was cyanotic, her breathing was noisy and laboured, and the usual pulmonary signs were present in a marked degree. For a time she was much relieved by iodide of potassium and tincture of lobelia. After an absence of several months she returned for advice on Sept. 30th, 1898. She was then having at least one severe attack of asthma each week and frequent violent fits of sneezing. She was ordered half a drachm of paraldehyde

[1] Brit. Med. Jour., vol. i. p. 65, 1893.

each night. For three nights she slept well, but after that the drug caused excitement. The dose was doubled, she then slept very well and the breathing was much improved. The sneezing fits ceased after she began to take the paraldehyde.

CASE 7.—The patient was a man, aged 36 years, who had been ill for 11 months. Asthmatic symptoms came on after an attack of influenza. He complained of shortness of breath, cough, loss of flesh, and night sweats. He said that he "could get no sleep because of the cough and the struggle for breath." He was given iodide of potassium during the day and a drachm of paraldehyde at bedtime. A week afterwards he reported himself to be much better and said that he now slept comfortably all night. The note in the case-book a month after he began the treatment says, "He sleeps well and is putting on flesh; he has gained 6 lb."

CASE 8.—The patient was a man aged 34 years who had been ill for two years. He complained of a very bad cough, profuse expectoration, and loss of flesh. He also stated that frequently during the night he had to spring out of bed because of a sudden sense of suffocation which ended in a severe and prolonged fit of coughing. He was ordered the same treatment as in the last case but only four doses of paraldehyde were given. When seen a week afterwards he reported that during the first two nights his sleep had been unbroken, that the next two nights it had been very good, and that although without paraldehyde for the three following nights he had had no attack and was able to lie quietly in bed all night.

CASE 9.—The patient was a woman, aged 30 years. She was neurotic and had been ill for three months. She was first seen on Dec. 6th, 1898. An aunt had suffered from asthma for 18 years. This patient complained of a painful sense of tightness in the chest, shortness of breath, and a troublesome cough, and she was subject to severe attacks of spasmodic dyspnœa during the night. The same treatment was ordered in this case. Immediately after taking the first dose of paraldehyde she fainted and had to be lifted into bed. She said that "the medicine was so strong that it took her breath away," but the result was that she slept all night. She did not continue the paraldehyde, but with iodide of potassium, &c., she improved and on Jan. 3rd, 1899, the report said that she was ever so much better and sleeping well.

CASE 10.—The patient was a woman, aged 34 years, who had suffered from asthma more or less for 14 years. She had had three attacks of rheumatic fever. The heart was normal. At her first visit she was very cyanotic, the shortness of breath was distressing, and the breathing was noisy and laboured. The symptoms were greatly aggravated at night and made sleep practically impossible. An expectorant mixture during the day and paraldehyde at night gave marked relief; she was able to sleep comfortably, and the breathing soon became easier. She continued to take paraldehyde for some weeks and always with benefit; the cough disappeared, and after a time she was able to dispense with both the expectorant and the paraldehyde.

CASE 11.—The patient was a woman, aged 43 years. She had suffered from asthma and bronchitis for five years. In her case the symptoms were severe, the cough was troublesome, and she got very little sleep because of the attacks of spasmodic dyspnœa which were frequent and painfully distressing. In addition to an expectorant mixture she was given a drachm of paraldehyde at bedtime. The latter medicine, to use her own words, gave her beautiful nights and she always felt so refreshed after the sleep.

The mere obtaining of sleep is of great importance for the asthmatic patient, the strength is saved and what is lost during the day may be more or less regained. The prevention of the spasm is even a greater boon, seeing that each attack increases and prolongs the accompanying bronchitis. Iodide of potassium and tincture of lobelia as a rule do much to relieve the bronchitis and to lessen the spasm, but their effect is immensely increased by securing sleep and the prevention of the nocturnal spasms by means of paraldehyde. The drug occasionally causes sickness and for this reason it proved of no use in a severe case of long standing bronchitis and emphysema. Its disagreeable pungent taste makes it objectionable to children and nervous patients, but it is well disguised in cinnamon water and tincture of orange-peel. It acts as a rule so rapidly that the dose ought to be taken after the patient has gone to bed. In the case of more than one of my patients it seemed to act immediately and for this reason one nervous man suffering from simple insomnia refused to continue taking it. In adults I find it best to begin with a dose of 60 minims, and as Dr. John Gordon[2] pointed out, as a result of his experimental use of the drug, the same dose has equally good hypnotic effect when it has been taken for months. Although Dr. Gordon does not mention asthma among the diseases in which he found paraldehyde useful as a hypnotic one of the results of his investigations might suggest its use in this disease. He found that it produced tranquil sleep with diminished respirations and in his paper on the subject he says, "This slowing of the respirations in many pulmonary diseases is of distinct advantage." He further says, "It is possible that, since a large amount of the drug is excreted by the lungs, its vapour may exercise a narcotic influence on the terminations of the sensory nerves of the lung tissue while it is being expired." One can, therefore, easily understand how, by its double action of inducing sleep and preventing pulmonary spasm paraldehyde has such a powerful effect for good in asthma.

ON THE TREATMENT OF "UNAVOIDABLE HÆMORRHAGE" BY REMOVAL OF THE UTERUS.

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I HAVE spent much of my leisure during the last few weeks in looking up the authorities on "placenta prævia" for some assured statement concerning its mortality. There is nothing more definite than is to be found in Simpson: "All obstetric authors seem to agree on this point, that there is no one complication in midwifery attended with more anxiety to the practitioner and few, if any, with more real danger to the patient than cases of unavoidable hæmorrhage from presentation of the placenta." He proceeds to give figures which go to show that the fatality is close on 40 per cent., but I gather from the smothered confessions of other writers and the open admission of my friends who have had large obstetric experience that it really is much higher; and in spite of the sound principles laid down for its treatment and the improvements therein made by Simpson himself it is probable that more than half the cases die. I have all my life avoided in every possible way contact with obstetric practice, and for 30 years have had no personal association with it save in occasional consultations. Amongst these have to be included 13 (now 14) cases of unavoidable hæmorrhage and of this the mothers have died in seven cases and, I think, only three of the children were born alive. It will therefore not be a matter of surprise if I say that I entirely agree with the sentence which I have quoted from Simpson's "Obstetric Works." I feel pretty sure that the full mortality of the condition is not yet known, so many patients die from the secondary complications due to the damage of the misplaced placental sinuses; and as these cases are generally not fatal till many days after delivery they are not returned as cases of "placenta prævia" but as peritonitis, &c. I gather from conversation that only immediate deaths are as a rule entered under the real and primary cause. This is of itself a point of interest about the condition, but not one which concerns me much, though evidently the higher the total mortality is found to be, primary and secondary, the stronger will be my subsequent argument from this point of view.

Another aspect from which "unavoidable hæmorrhage" is extremely interesting is that it is one of the few points in the practice of surgery where our conduct may be influenced by ecclesiastical authority. The Church of Rome rules that in such a case the living birth of the child is all important and when the interests of mother and child conflict those of the former must yield. In one case to which I was called by the late Dr. Wynne Thomas this decision, arrived at by the mother and the father of the child, as advised by their spiritual directors, seemed to us to cost the mother her life though it did save the child. Under such circumstances that part of the treatment directed against the immediate risk from hæmorrhage has its influence for good directly

[2] Contributions to the Study of Paraldehyde, Brit. Med. Jour., March 9th, 1889.

contravened and probably entirely annulled by the causes introduced and the risks produced of secondary mortality. All these conditions existed in a case to which I was called on Dec. 21st, 1898, by Dr. Herbert Simpson of Rugby. The patient was young and slightly built and had as bad a history of hæmorrhage as a woman well could have. She had always had "something wrong" inside and had been a regular consumer of ergot for years. She had been twice curetted and cauterised. She had nearly lost her life from post-partum hæmorrhage in her second confinement, had had several miscarriages with severe losses, and I found her in her fourth confinement at the full time with the cervix closed and rigid, the liquor amnii drained off, the uterus firmly contracted over the child, and yet she had been bleeding with alarming profusion for five hours, in spite of many other and orthodox points of treatment which Dr. Simpson had employed. The child was easily ascertained to be alive and the considerations of its interest as superior to that of the mother were not pressed by anyone. But I confess that the recollection of previous experiences made me hesitate to do what was clearly necessary, forcibly dilate the cervix and extract the placenta, whether I followed that by version or not, whether or not I left the after-labour to nature and the child to its fate. An alternative occurred to me to which I was prompted by the splendid success which has followed it in my hand and in those of others under different yet very analogous circumstances—removal of the uterus. It had many arguments in its favour; it would save the child, it probably would save the mother, and it would relieve her of the condition of perpetual misery and risk in which she had been living for years and would therefore assist her in properly rearing the children she had, rather than tend to procreate others to whom she certainly showed no likelihood of ever being able to give proper care. There were no arguments against except the familar one of "mutilation." As I have already characterised that as the argument of the brothel-keeper rather than one for the consideration of the physician I attach little importance to it. Putting myself in the place of the patient's husband, so far as I could, I felt that the Church of Rome had some reason for its decision, though more as a matter of right than of salvation—that any proceeding which would diminish the mother's risk from 50 per cent. or 40 per cent., or even 20 per cent. to four or five per cent. must be selected. Finally, the argument would have been overwhelming with me as a husband that my wife would have health and comfort for her after-life, instead of misery and risk, irrespectively of sterility or mutilation or anything else. I therefore proposed hysterectomy, and after full discussion it was accepted by Dr. Simpson, by the husband, and by the patient. I performed it with the aid of the elastic ligature[1] by that known in America as the "Tait-Porro" operation. The patient made a straightforward recovery, interrupted only by occasional rectal distension. A fine female child was born alive and lived for a month, succumbing, unfortunately, a month after birth when the cold weather distributed bronchitis.

This case forms, so far as I know, a new departure. Whether it will receive a universal commendation is not the least a matter of doubt. The "mutilationists" will raise their voices against my proposal, but there are others who will follow my example, and to those who do this will surely come the comfort that they will diminish "the anxiety to the practitioner and the real danger to the patient" of the obstetric difficulty which Simpson so graphically tells us has more of both than any other.

Birmingham.

[1] On the Surgical Aspect of Impacted Labour, by Lawson Tait. Brit. Med. Jour., March 22nd, 1890, p. 657. The operation may be thus briefly described, and as the relation of parts are bound to be always the same there is nothing easier. After a four-inch incision is made as usual for abdominal section a loop of drainage tube is carried over the uterus and down to the pelvic sulcus. This is tightened sufficiently to strangle the circulation and then tied. The uterus is then opened and the child and placenta are delivered. The uterus is then drawn out of the abdomen, a stout needle is passed through the cervix immediately above the ligature, the body of the uterus is cut away, the stump is fixed in the angle of the wound, the latter is accurately closed after the necessary cleansing, and the stump is dressed with perchloride of iron or other desiccant. The whole thing is over in five minutes, being about the easiest and simplest operation in surgery.

MEDICAL MAYOR.—Mr. H. C. Barclay, M.D., Ch.B. Univ. New Zealand, of Waimate (South Canterbury), N.Z., has been elected mayor of his municipality.

NOTES ON THE PRESENCE OF THE BACILLUS COLI AND OTHER ORGANISMS IN THE TISSUES AFTER DEATH.

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THE presence of micro-organisms in the viscera after death, apart altogether from the putrefactive varieties, which do not, as a rule, appear for several days, is a very common occurrence. The true significance of their presence is not, however, clear, nor is it definitely known whether their appearance is a post-mortem or an ante-mortem phenomenon. Most observers, however, regard the invasion as taking place during the last hours of life and this theory is supported by the work of Beco[1] who, examining bodies from one-quarter to three-quarters of an hour after death, found the bacillus coli in the deep organs in nearly 50 per cent. of the cases. Why in some cases the organs should be invaded by micro-organisms whilst in others almost exactly similar they should escape is not clear, nor is it known why certain organs should be attacked and others spared. The invasion of the deep organs by the bacillus coli and its escape from its natural habitat, the intestines, which was formerly regarded as consequent upon some intestinal lesion, has more recently been attributed to the spread of the bacilli through the biliary channels, it being generally accepted that they are not able to pass through the healthy wall of the gut. The question of the method of their escape and multiplication is one of some importance as bearing upon these cases of suppuration in which during life the bacillus coli is the only organism to be found and also in relation to the inquiries, Is infection by the bacillus coli a common complication in certain diseases? and Is it capable of giving rise to symptoms or hastening death?

During six months I have made systematic bacteriological examinations of the organs in the necropsies at the Bristol Royal Infirmary with a view to elucidating some of these points. The appended tables are compiled from notes on the first 50 cases. Of these 50 cultures 17 were sterile; the bacillus coli alone or associated with other organisms was found in 20, whilst 13 showed other varieties of bacilli or cocci.

TABLE 1.—*Cases in which no Micro-organisms were found.*

Disease.	Hours after death.	Organs examined.
Chronic alcoholic; syncope	21	Spleen and kidney.
Accident; ruptured bladder	21	Spleen.
Stricture of the urethra; hydronephrosis	12	Kidney and spleen.
Enteric fever	?	Spleen.
Cerebral tumour	24	Kidney.
Chronic endocarditis	18	Kidney.
Bronchitis	9	Spleen and kidney.
General tuberculosis	32	Brain and spleen.
Carcinoma of the bladder	20	Liver.
Septic peritonitis	30	Spleen.
Lumbar abscess; hip-joint disease ...	31	Spleen.
Intestinal obstruction; Meckel's diverticulum...	12	Liver.
Carcinoma of the liver	?	Liver and spleen.
Spinal caries	15	Spleen and kidney.
General tuberculosis	20	Spleen.
Urethral fever, stricture, cystitis, &c.	19	Spleen.
Phthisis	13	Heart and kidney.

[1] Annales de l'Institut Pasteur, 1895.

The average time after death at which the examinations were made was 20 hours, whilst in the remaining 33 cases the average was 24 hours. It is possible that the difference in time may to some small extent have been a factor in determining the sterility of some of the cultures, for after death such organisms as may be in the tissues multiply rapidly, so that the longer the time that has elapsed the greater is the chance of inoculating the culture medium. In 10 cases only one of the viscera was examined. This again would lessen the chance of detection and it is possible that in the cases with intestinal lesion (enteric fever, intestinal obstruction, and septic peritonitis) failure may be attributed to one or both of these causes. After making such allowances, however, the fact is established that under ordinary conditions of temperature and surroundings in a considerable percentage of cases the tissues may remain free from bacterial invasion for a period of from 24 to 36 hours after death.

The bacillus coli was found in 40 per cent. of the cases, as is shown in Table II. From the rapid growth in gelatin,

TABLE II.—*Cases in which the Bacillus Coli was Present.*

Disease.	Hours after death.	Organs examined.	Organisms found.
Peritonitis, middle-ear disease, and pneumonia	12	(*a*) Lung and ear. (*b*) Peritoneum.	(*a*) Diplococcus. (*b*) Bacillus coli.
Gastric ulcer and chronic nephritis ..	18	(*a*) Kidney. (*b*) Spleen.	(*a*) Sterile. (*b*) Bacillus coli.
Enteric fever and pneumonia	?	Spleen and right apex.	Bacillus coli.
Enteric fever	20	(*a*) Spleen. (*b*) Liver.	(*a*) Bacillus coli. (*b*) Sterile.
Gastric ulcer and perisplenic abscess	34	Spleen.	Bacillus coli.
Enteric fever, pneumonia, and middle-ear suppuration ...	36	(*a*) Lung. (*b*) Ear, kidney, and spleen.	(*a*) Bacillus coli and staphylococcus. (*b*) Bacillus coli.
Infantile diarrhœa and pneumonia ...	24	Spleen.	Staphylococcus and bacillus coli.
Ulcerative colitis ...	30	(*a*) Liver. (*b*) Spleen.	(*a*) Bacillus coli. (*b*) Sterile.
Morbus cordis and chronic peritonitis	31	(*a*) Kidney. (*b*) Liver.	(*a*) Sterile. (*b*) Bacillus coli.
Hydatid of the liver and suppuration of the gall-bladder, &c.	26	Kidney and gall-bladder.	Bacillus coli.
Marasmus	20	Liver and spleen.	Bacillus coli.
Pleurisy and ascites	27	(*a*) Spleen. (*b*) Liver.	(*a*) Sterile. (*b*) Bacillus coli.
Carcinoma of the bladder	24	Spleen.	Bacillus coli.
Alcoholism, fatty liver	18	(*a*) Spleen and liver. (*b*) Kidney.	(*a*) Sterile. (*b*) Bacillus coli.
Acute peritonitis ...	24	Peritoneum.	Bacillus coli and bacillus mesentericus, &c.
Sarcoma of the stomach	24	(*a*) Spleen. (*b*) Kidney.	(*a*) Sterile. (*b*) Bacillus coli.
Intussusception ...	—	Kidney.	Bacillus coli.
Chronic nephritis ...	24	Kidney.	Bacillus coli.
Acute phthisis... ...	30	(*a*) Spleen. (*b*) Kidney.	(*a*) Bacillus coli. (*b*) Staphylococcus pyogenes aureus.
Pneumonia	20	(*a*) Lung. (*b*) Spleen.	(*a*) Pneumococcus and bacillus coli. (*b*) Pneumococcus.

formation of gas in glucose gelatin, from the power of coagulating milk and giving the indol reaction, the bacilli were shown to belong to the Escherich group. Alone no one of these tests is to be relied upon, the indol test being particularly fallacious. A valuable means of distinguishing between bacteria of the Escherich and Gärtner groups is the difference in their reaction to typhoid serum, the former never giving a positive reaction, whilst the latter generally does so at ordinary dilutions.[2] Of the bacilli tested only one of the present series gave a typical reaction with a dilution of one in 50, whilst three other cultures exhibited loss of movement but no typical clumping. The bacilli which gave a typical reaction were taken from the case of carcinoma of the bladder; they in all other respects behaved as members of the Escherich group.

It will be seen from Table II. that it is comparatively rare to find other organisms associated with bacillus coli in the same tissues. Beco has shown this to be due to the fact that after death the abundant growth of bacillus coli tends to extinguish any other forms which may originally have been present. This is a point of practical importance, for the post-mortem discovery of bacillus coli in a suppuration might lead to the supposition that this was the cause of the lesion, whilst the true determining cause may have been pyogenic cocci which have since perished. The finding of bacillus coli after death does not warrant the conclusion that it was the exciting cause of the lesion during life. It seems probable, too, that pure cultures of bacillus coli obtained from suppurations during life may in the same way lead to erroneous diagnosis. It is noteworthy that in 14 of these cases an intestinal lesion existed which might possibly have been the channel of infection. Of the remaining six cases 13, 14, 16, and 18 had abdominal viscera affected, 19 and 20 had no abdominal lesions. A culture of bacillus coli given to me by Mr. F. Wallis Stoddart who obtained it direct from Escherich's laboratory has been of much service in the work of distinguishing between the various coliform bacilli.

With regard to enteric fever (six cases) bacteriological examination for the detection of the Erberth-Gaffky bacillus was only successful in two cases, in both of which it was found in the spleen 24 hours after death. The method of isolation adopted was that of halo colonies, as recommended by Mr. Stoddart.[3] The other four post-mortem examinations were conducted from 24 to 36 hours after death and the cultures showed the wide and general distribution of bacillus coli which in one case was found in the kidney, in consolidated lung, and in a middle-ear suppuration. To ensure success cultures for the discovery of Erberth's bacillus should be made as soon as possible after death, preferably from the spleen. For differentiation from coliform bacilli the tests relied on were Widal's reaction and the non-production of indol, of gas-bubbles, or of clot in milk.

The second of the diphtheria cases (see Table 3), although

TABLE III.—*Cases of Diphtheria.*

Hours after death.	Organs examined.	Organisms found.
21	(*a*) Lung. (*b*) Cervical glands.	(*a*) Streptococci, Klebs-Löffler bacilli (short), cocci, and bacilli. (*b*) Streptococci and staphylococci and short Klebs-Löffler bacilli.
12	(*a*) Larynx. (*b*) Lung. (*c*) Spleen.	(*a*) Short bacilli not resembling bacillus Klebs-Löffler, staphylococcus aureus. (*b*) Streptococcus, staphylococcus aureus and citreus. (*c*) Sterile.
12	(*a*) Lung. (*b*) Spleen.	(*a*) Staphylococci and streptococci, Klebs-Löffler and other bacilli. (*b*) Sterile.
28	Fauces, bronchus, and lung.	Klebs-Löffler bacilli (short) and staphylococcus pyogenes aureus.

diagnosed both clinically and at the post-mortem examination as diphtheria, was probably a membranous laryngitis of coccal origin. Klebs-Löffler bacilli were not present in either ante- or post-mortem cultures. The presence of the specific bacillus in the consolidated lung of three of the cases points to the possibility that the pneumonic condition may depend as much upon their presence as upon that of pneumococcus or of pyogenic organisms. The futility of purely local treatment of the disease is demonstrated by the presence of Klebs-Löffler bacilli in the enlarged cervical glands. Kanthack and Stephens[4] say that this is a common occurrence. They found also the organism present in pneumonic lung in 100 per cent. of cases, in the kidney in two out of three cases, and in the spleen in 10 out of 21 cases. In both of the cases mentioned above in which the spleen was examined the cultures remained sterile. During the progress of a case of diphtheria in life there is a tendency as convalescence approaches for the bacilli to alter in character, to become shorter, uniformly staining, and

[2] Durham: THE LANCET, Jan. 15th, 1898.

[3] Journal of Pathology and Bacteriology, June, 1897.

[4] Ibid.

generally atypical. This change was marked in all three of the cases examined, alike in the bacilli obtained from the membrane and in those cultivated from the tissues.

TABLE IV.—*Pyogenic or other Organisms.*

Disease.	Hours after death.	Organs examined.	Micro-organisms.
Ulcerative endocarditis	30	Kidney, spleen, and heart.	Staphylococcus pyogenes albus.
Empyema	31	Spleen.	Ditto.
Retroverted gravid uterus, cystitis, &c.	21	Spleen.	Staphylococcus citreus.
Acute infective osteomyelitis	12	Spleen, operation wound, and pleuritic abscess.	Staphylococcus pyogenes aureus.
raumatic peritonitis	12	Peritoneum.	Staphylococcus.
Malignant disease of the pancreas	20	(*a*) Spleen. (*b*) Liver.	(*a*) Bacilli (?) with spores. (*b*) Sterile.

One or other variety of staphylococcus (see Table 4) was most commonly developed. This is of interest in connexion with such diseases as ulcerative endocarditis and acute infective osteomyelitis in which the value of treatment by anti-streptococcic serum might be tested.

Clifton, Bristol.

RECOVERY AFTER BULLET WOUND OF THE HEAD AND DESTRUCTION OF BRAIN TISSUE.

BY ROBERT FENNER, L.R.C.P. EDIN., M.R.C.S. ENG.,
LATE SURGEON TO THE CROMER COTTAGE HOSPITAL.

ON the evening of July 10th, 1897, a man, 42 years of age, who was watching some youths at revolver practice, was accidentally shot from a distance of two yards. Arriving on the spot about 30 minutes subsequently I found him insensible, breathing slowly and somewhat heavily but not stertorously. His pupils were dilated and did not react to light. He was bleeding from the mouth and blood was oozing from the nose. At the back of the head, about one and a half inches to the right of the middle line and two inches above a line touching the upper margin of the external auditory meatus, there was a contused somewhat clean-cut wound from which blood was oozing and brain matter protruding. Having cut the hair and carefully cleansed and dressed the wound, rendering it as aseptic as possible, I caused him to be conveyed to the Cromer Cottage Hospital, a distance of two and a half miles. On admission he was practically in the same condition as above described but the pulse was slower and scarcely perceptible. Under an anæsthetic and with the assistance of Mr. H. C. Dent I exposed the wound by a large crucial incision through the scalp, turning up the four flaps well out of the way. Having thoroughly irrigated the wound and removed the protruding brain substance I found a circular and jagged hole in the skull admitting the little finger to the first joint. There was much splintering of the inner table and I could feel several large splinters of bone but no bullet even with a probe, although I could follow its track in a direction pointing to the right margin of the left orbit until the probe impinged upon hard bone. I now applied a large trephine and removed a circle of bone, taking in as much of the bullet wound as possible. Having removed several fragments of bone I made a careful examination of the track with my finger, passing it as far as I could reach into the cerebral substance, but I did not reach the bullet nor could I feel it with a long probe. The wound was copiously irrigated with a corrosive sublimate solution (1 in 4000), the nozzle of the irrigator being passed well into the brain, the flaps were sutured, and a small drainage-tube was left in position. The patient passed a quiet night but remained unconscious, blood continuing to ooze from the nose and mouth. On the following morning (July 11th) he had partially regained consciousness but was irritable and was aroused with difficulty. The pulse-rate was 52 and the respirations were 16. Hæmorrhage continued from the nose and mouth and the eyelids on both sides were much swollen. The next day the patient remained in an irritable condition, taking nourishment with difficulty. He was very restless and complained of pain in the head when questioned. The temperature was 101° F.; the pupils were equal but not reacting to light. The wound was dressed. There had been much oozing of blood and as the flaps were bulging two stitches were removed. On July 14th the temperature was 100°. Both eyes were ecchymosed. The bleeding from the nostrils and mouth had ceased. The pupils were equal and reacting to light. The pulse was 54. The patient was still irritable. Much brain substance was removed with this and subsequent dressings.

The patient remained in the same irritable condition until July 18th when he spoke rationally and could recall past events. He still complained of headache and was very drowsy and roused with difficulty. He had complete control over his bladder and bowels; his retinæ were examined and found to be normal, the reflexes were present and normal, and his senses of smell and taste were unimpaired. His temperature remained at 100° or over until July 21st when it gradually reached the normal. Bleeding from the nose ceased and by July 28th ecchymosis of the left upper eyelid alone remained. The patient gradually recovered strength and although somewhat irritable and childish he remembered past events perfectly and was quite rational. The hernia cerebri gradually became covered with healthy granulations and was completely healed by August 20th, at which date he left the hospital.

One year after the accident—viz., in July, 1898—the patient suffered from a slightly ataxic gait and an inability to see the left half of objects but otherwise he seemed none the worse for the injury.

This case illustrates the great amount of damage which can be borne by the cerebral substance provided the floor of the fourth ventricle and the sinuses are left intact. The bullet must have been flattened and irregular, having passed through a felt hat and the skull before ploughing up the brain substance. The course of the bullet was slightly upwards and to the left and the amount of bleeding from the nose and mouth and into the soft tissues surrounding the eyes point to the great damage sustained by the anterior fossa of the base of the skull. Although the chances of recovery appeared to be *nil* I trephined at once in order to anticipate tension and for the purpose of effective antisepsis and drainage.

I heard from the patient at Christmas, 1898—18 months after the accident—that with the exception of the partial loss of vision referred to he was completely restored to health and able to carry on his vocation. Dr. Johnson Taylor of Norwich kindly examined the patient's eyes and writes: "Your patient has left lateral hemianopsia due in all probability to an injury to the right optic tract or possibly to an injury to his right visual centre in the occipital lobe. The right half of each field and the central visual activity of each eye are normal. He reads ⅔ with either eye and his accommodation is good. The ophthalmoscope shows a normal state of each fundus and the movements of the globe are normal; no other of his special senses seem in the least affected."

New Cavendish-street, W.

THE INFLUENCE OF RAINFALL ON BERI-BERI.

BY P. N. GERRARD, M.D. DUB.,
DISTRICT SURGEON, ULU SELANGOR, FEDERATED MALAY STATES.

THE prevailing opinion amongst so many as I have had the pleasure of meeting of the members of the profession practising in the Malay Peninsula, where this disease causes such a very large number of deaths yearly, seems so much in favour of the supposition that cases of beri-beri occur more frequently during or after a wet month or that the severity of the cases is increased after wet weather that I have been led to collect the cases occurring in my district (Ulu Selangor, Malay States) for the past seven years. I have constructed a chart of the rainfall and beri-beri admissions for analysis

and I hope to elicit remarks from other medical men who have had to deal with this most interesting and, I think I may say, badly understood disease. The total number of cases in the chart amounts to 2422, extending over 84 months from February, 1891, to December, 1897, inclusive.

Calling the months in which a rise or fall of rainfall was accompanied by a similar rise or fall of beri-beri admissions, "Positive" evidence, and the contrary, "Negative," I obtained the following figures:—

Months.	Positive.	Negative.
6 Januaries	3	3
7 Februaries	1	6
7 Marches	3	4
7 Aprils	3	4
7 Mays	3	4
7 Junes	4	3
7 Julys	5	2
7 Augusts	2	5
7 Septembers	4	3
7 Octobers	4	3
7 Novembers	0	7
7 Decembers	1	6
Totals	33	50

This we may, I think, fairly consider as our first contradiction to the original proposition that "the rainfall influences beri-beri or the cause of beri-beri." Of the 83 months in this list we have only 33 showing positive evidence as against 50 showing negative; some of these, too, show such ill-balanced proportion that they may be fairly excluded, as is shown in the following table*:—

In June, 1891, beri-beri shows a fall of 1 admission and rainfall 12 in.
" July, 1892, beri-beri " " 2 cases and rainfall 10 inches.
" June, 1895, beri-beri " " 13 cases and rainfall 1 inch.
" May, 1896, beri-beri " " 5 cases and rainfall 8 inches.
" February, 1897, beri-beri shows a fall of 23 cases and rainfall 2 in.
" October, 1893, beri-beri shows a rise of 4 cases and rainfall 10 in.

* The word "fall" in this table means diminution both with regard to beri-beri and rain—e.g., in June, 1891, one case less of beri-beri was admitted than in the preceding month and 12 inches less rain fell than in the preceding month.

Deducting these cases from the positive evidence we get 27 months positive, six months neutral, and 50 negative, and, in fact, these six neutral may be treated as negative evidence. As an example of how I have arrived at the positive + or negative − evidence I quote in the following table the year 1892 as a sample, 1891 being one month short (where beri-beri rises and rainfall also rises the evidence is positive, the contrary negative):—

Month.	Evidence.	Beri-beri.	Rainfall.
January	Positive	Fell 32 to 16 cases	Fell 28 to 13 inches
February	Negative	" 16 " 13 "	Rose 13 " 15 "
March	"	Steady (13 cases)	" 15 " 20 "
April	"	Rose 13 to 17 cases	± 20 inches
May	"	" 17 " 42 "	± 20 "

The next point of contradiction I wish to draw attention to is that during the seven years under consideration the months in which the greatest amount of rain fell were not the months on which the greatest number of admissions took place, nor were the months next following the heaviest rainfall the correspondingly highest in admission except in one case—namely, in the seven Decembers during which taken together 99 inches fell, followed in six Januaries by a total of 232 cases, 232 being the fourth highest total of admissions and 99 the fourth highest of rainfall; this is a sop to the supporters of the "after rain beri-beri increase" theory, but it has not very much weight when it is considered that in the case of the other months (seven of each), altogether 70 months out of a possible 83, the highest rainfall does not correspond with highest beri-beri; nor is highest rain followed the next month by beri-beri. The highest rain occurred in seven Octobers, accompanied by the seventh highest number of admissions of beri-beri and followed by the second highest number of admissions in seven Novembers. The second highest rain occurred in the seven Aprils accompanied by the fifth highest beri-beri list and followed immediately by the third highest beri-beri list in the seven Mays. The third highest (Novembers) rain accompanies the second highest beri-beri and is followed by the highest beri-beri (Decembers). The fourth maximum rain (Decembers) accompanies the highest and is followed by the fourth maximum beri-beri. The fifth maximum rain accompanies the third highest beri-beri and is followed by the ninth beri-beri; the sixth rainfall accompanies the eleventh beri-beri and is followed by the seventh beri-beri; the seventh rainfall accompanies the ninth beri-beri and is followed by the tenth beri-beri; the eighth rainfall accompanies the sixth beri-beri and is followed by the fifth beri-beri; the ninth rainfall accompanies the twelfth beri-beri and is followed by the eleventh beri-beri; the tenth rainfall accompanies the tenth beri-beri and is followed by the twelfth beri-beri; the eleventh rainfall accompanies the eighth beri-beri and is followed by the sixth beri-beri; the twelfth rainfall accompanies the fourth beri-beri and is followed by the eighth beri-beri. The maximum monthly rainfall for the seven years was in the following order: first Octobers, second Aprils, third Novembers, fourth Decembers, fifth Mays, sixth Septembers, seventh Junes, eighth Marches, ninth Augusts, tenth Julys, eleventh Februarys, and twelfth Januarys; whereas the maximum beri-beri admittances were in first Decembers, second Novembers, third Mays, fourth Januarys, fifth Aprils, sixth Marches, seventh Octobers, eighth Februarys, ninth Junes, tenth Julys, eleventh Septembers, and twelfth Augusts. The order of merit of the years with regard to rainfall and beri-beri is shown in the following table:—

	The wettest year.		Beri-beri admission order.		
1	1891	250 in. (highest)	1891	121	7 (lowest)
2	1892	178 inches	1892	262	4
3	1895	123 "	1895	428	3
4	1893	111 "	1893	242	5
5	1894	110 "	1894	204	6
6	1897	109 "	1897	445	2
7	1896	104 in. (lowest)	1896	700	1 (highest)

In 1892 the district began to show signs of waking up and mines began to be opened. Since this time the cases have steadily mounted until 1896, falling a little again in 1897. Through the courtesy of Messrs. Grey and Thomson of the district office I have had access to the district land books and have found out the amount of land alienated by Government for mining purposes in each year as follows:—

Year.	Land alienated.	Order.*	Beri-beri.	Order.*
1891	None recorded	—	121 cases	7 (lowest)
1892	194 acres	6	262 "	4
1893	921 "	2	242 "	5
1894	968 "	1	204 "	6
1895	212 "	5	428 "	3
1896	840 "	3	700 "	1
1897	678 "	4	445 "	2

* The figures in these columns indicate the relative position of the years 1891-1897 as regards the amount of land alienated and the number of cases of beri-beri.

The fact that the majority of miners are Chinese who very rarely open the ground at once, usually felling the jungle and then waiting for two years more or less before starting mining, coupled with the fact that everyone recognises that the district has become much busier in the last few years, will cause these figures to throw some light on the subject, although the amount of land alienated any given year does not bear any direct proportion to the number of cases that year. Allowing the usual two years for the land to lie unmined we find from the figures of the alienation of land that 1895, 1896, and 1897 ought to have produced the highest number of cases, and actually that is so, for during the years 1893, 1894, and 1895 2201 acres were alienated out of a total of 3813, and during the years 1895, 1896, and 1897 1573 cases of beri-beri occurred out of a total of 2422, considerably over half the amount of total land alienated and well over half the total number of cases in the seven years.

One more fact may be culled from the months in which

the greatest amount of rain fell—viz., that they do not correspond with the highest beri-beri admissions in their individual position which may be seen on reference to the following table:—

Year.	Rainfall.		Beri-beri.	
	Maximum.	Minimum.	Maximum.	Minimum.
1891	October, 5·4 in.	March, 0·6 in.	December, 32 cases.	February and October, 5 cases
1892	June, 2·3 in.	August, 7 in.	May, 42 cases.	February and March, 13 cases
1893	October, 13 in.	March, 3 in.	December, 35 cases.	July, 7 cases
1894	April and December, 1·4 in.	February, 1 in.	April, 34 cases	September, 5 cases
1895	October, 2·6 in.	January, 1 in.	December, 74 cases	February, 15 cases
1896	October, 1·5 in.	January and May, 2 in.	November, 75 cases	June, 36 cases
1897	December, 2·0 in.	July, 5 in.	January, 78 cases	July and December, 20 cases

It is also worthy of notice that the greatest number of admissions in any month for the several years occurred in 1891 in December, in 1892 in May, in 1893 in December, in 1894 in April, in 1895 in December, in 1896 in November, and in 1897 in January; and the highest rainfall each year occurred in 1891 in October, in 1892 in June, in 1893 in October, in 1894 in April and December, in 1895 in October, in 1896 in October, and in 1897 in December. From this may be seen that although four Octobers out of seven have shown the maximum rainfall, yet October does not occur in the beri-beri list of highest admittances and the month following—that is, November—only once.

These facts, coupled with the universal experience of the miners—namely, that when the mines are opened a certain large proportion of men will get beri-beri and a comparatively small number suffer from severe malarial fevers—seems in my opinion to point to the cause of the disease being in the soil or perhaps to its requiring the presence of malarial conditions or even parasites for its proper development.

[Dr. Gerrard next recapitulates the existing theories as to the etiology of beri-beri, but owing to the pressure on our space we have omitted this part of his paper. We have omitted his chart because the tabular statements make his arguments quite clear.]

It is beyond my province here to deal with such interesting points as the initial symptoms, the physical signs, progress, diagnosis, and treatment, all of which sub-divisions of this powerful and obscure disease require separate study, deep and honest, careful and concise, before we can hope to arrive at a true conclusion. I can only express a wish that the fact of its independence of meteorological vagaries may help to put us on our way to the commencement of that study which will begin on that date on which the cause is brought to light.

Since writing the above I have cultivated from the blood of an acute case of beri-beri a micrococcus somewhat similar to one described by Pekelhäring and Winkler, but not so irregular in size. I am forwarding slides to the School of Tropical Medicine. No bacilli were to be found on the plates or in tubes. I may also mention that the figures for 1898 endorse this argument against the influence of rainfall on this disease.

Ulu Selangor, Federal Malay States.

BERKELEY HOSPITAL.—The annual meeting of the managerial staff of this hospital was held on Feb. 1st under the presidency of Lord Fitzhardinge. The medical report stated that 75 cases had been admitted during the past year. The financial statement showed an adverse balance of £61 at the end of the year.

DORSET COUNTY HOSPITAL.—The annual meeting of governors, managers, and subscribers to the Dorset County Hospital, Dorchester, was held on Feb. 2nd under the presidency of Captain Acland. The report stated that during the past year 268 in-patients had been admitted and 868 out-patients attended. The financial statement showed that the income from all sources amounted to £2356 and the expenditure to £2347.

A NOTE ON "CASES OF PHTHISIS WITH PECULIAR CARDIAC PHYSICAL SIGNS."

BY WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND.,
SENIOR PHYSICIAN TO ST. GEORGE'S HOSPITAL AND TO THE BELGRAVE HOSPITAL FOR CHILDREN; JOINT LECTURER ON MEDICINE IN THE MEDICAL SCHOOL OF ST. GEORGE'S HOSPITAL.

UNDER the heading of "Cases of Phthisis with Peculiar Cardiac Physical Signs" two cases of great interest were recently reported in THE LANCET by Dr. Hale White[1] and by Mr. W. Southwick Willmore[2] which had until now escaped my notice. The physical signs noted were those of a great displacement of the heart to the right, yet at both necropsies the heart was found to be normal and *not* displaced. Both observers seem to accept the position that the displacement which they had diagnosed must have been apparent only, the cardiac sounds being conveyed by consolidated tissue, though they are at a loss to account for the impulse which in one case was felt and in the other was seen as well as felt in the right chest, and the conclusion arrived at is that "we must not assume that when the heart's impulse is seen and felt far on to the right side of the chest the organ is necessarily dragged or pushed over or altered in size." As any interpretation of the kind suggested might tend to shake that trust in our clinical methods of diagnosis which it is desirable that we should uphold, the time may not be thought to have passed for this reference to the cases and for an attempt to rid them of their mysterious character and to reconcile statements which were probably only in appearance contradictory. The clinical observations described are to my mind conclusive evidence of the existence during life of a considerable displacement of the heart to the right in both cases; but it is conceivable that this displacement could not be readily demonstrated by the ordinary post-mortem examination.

Cases of this sort occur from time to time among the large number of cases in which fibroid excavating disease of the right lung tends to displace the heart more or less. When at the same time the left lung and the heart are fixed by adhesions the right side of the thorax falls in. If the right chest should not fall in this must be due either to a considerable emphysematous distension of the right middle and lower lobes *or*, failing this, to the encroachment of the heart and of the left lung into the right chest. It is therefore clear that the cardiac displacements which are considerable and horizontal belong more especially to the group of cases in which, whilst the thorax remains symmetrical, the right lower lobes are not only free from distension but are often themselves the seat of destructive lesions such as those reported in one of the two cases. Precisely similar cases have come under my own notice.

In January, 1891, closely adjoining beds were occupied by two patients under my care with destructive lesions in the right lung in whom the heart was much displaced, the cardiac dulness and impulse occupying in the right chest the position which normally belongs to them in the left. One of these patients, suffering from extensive bronchiectasis of the right lung, in whom Mr. Bennett had resected the right ninth rib at my request but had failed to obtain any discharge of pus, was exhibited at the Medical Society of London[3] under the heading of "Dexiocardia"—a term properly restricted to the exceedingly rare cases in which the heart alone is congenitally transposed to the right, the other viscera not being transposed. Both patients died and were examined after death. In the first case I happened to be prevented from witnessing the beginning of the necropsy and I was met on my way to the post-mortem room by a report that whilst the right lung was extensively excavated the relations of the heart were absolutely normal—a report which, not entertaining any doubt as to the reality of the displacement during life, I received with surprise and not without some reservation as to its retrospective significance. In our Post-mortem and Case Book (No. 64, 1891) may be seen facing each other two equally trustworthy and accurate records, one describing the

[1] THE LANCET, Nov. 19th, 1898, p. 1323.
[2] THE LANCET, Dec. 10th, 1898, p. 1548.
[3] Transactions of the Medical Society of London, vol. xiv., Feb. 16th, 1891

heart as it lay in its normal position, the other setting forth the clinical evidence of great displacement of the heart into the right chest. I never ceased to believe that the heart had been contained within the right chest before the chest was laid open and that the displacement might have been visible had the pericardium been opened from the abdomen before opening the chest. The second necropsy,[1] that of the case of bronchiectasis, showed the cardiac displacement without any difficulty, thanks to the powerful adhesions which retained the heart in the position which it had occupied during life; and this confirmed me in the view which I had taken of the first. Both cases were, practically speaking, identical in their clinical signs, and the pulmonary lesions were closely analogous—viz., considerable destruction of pulmonary tissue and fibrosis involving the posterior part of the upper lobe and extending into the inferior lobe almost to the base. The leading difference was that in one case the right pleuro-pericardial adhesions were continuous with the retracted fibrous tissue of the lung, in the other they were not. If this source of fallacy be borne in mind by the pathologist he may so conduct the operation as to demonstrate the actual condition. But even should the heart have been allowed to slide back unobserved into the left chest, owing to the admission of air into the pleuræ, it may not be impossible to reconstruct the true pathological anatomy of the thoracic contents. Thus in the cases reported by Dr. Hale White and by Mr. Southwick Willmore, both of which, as is essential for the production of the fallacy in question, were free from collapse of the right thoracic wall, a considerable proportion of the total capacity of the right half of the thorax corresponding to the extensive destruction of lung tissue had to be accounted for. This surplus of space we must assume to have been filled by the heart since it could not have been occupied by the right lung owing to the pneumonic condition of the lower lobes in one of the cases and to their diseased and airless condition in the other. I would therefore suggest for both these instances the same explanation which I had adopted at the necropsy on my own case—viz., that when the sternum and costal cartilages were removed the heart must have dropped backwards by its own weight and to the left owing to the partial subsidence of the overstretched left lung. The heart would then have been seen in apparently natural lateral contact with the right lung; yet by reapplying the sternum it might have been possible to show that the damaged lower right lobes, practically incapable of expanding, could not have completely tenanted the vacated right parasternal region.

Taking, then, the view that these were instances of *mobile hearts held in the right chest by atmospheric pressure* owing to extensive destruction of the right lung without compensating collapse of the chest wall, it may perhaps be suggested to clinicians that skiagraphy might place their diagnosis of displacements of the heart beyond any chance of scepticism, and to pathologists that they might in investigating cases of this kind modify their method of section in some suitable manner likely to afford a view of the heart before there had been any possibility of its relations having been disturbed.

Curzon-street, Mayfair, W.

[1] Post-mortem and Case Book, No. 64, 1892.

A NEW PREPARATION FOR RAPIDLY FIXING AND STAINING BLOOD.

BY LOUIS JENNER, M.B., B.CH. OXON., M.R.C.P. LOND.

(From the Clinical Laboratory, St. Thomas's Hospital.)

MOST persons will agree that the only justifications for introducing a new histological stain are (1) that it should demonstrate something new, or (2) that it should demonstrate something more plainly and readily than before, or (3) that it should be a simpler method than that in general use. It is claimed for the following new compound blood stain that it at any rate fulfils the last two conditions. The stain is a single solution, easy to make up, which keeps well, which will fix and stain ordinary blood films in two minutes, and which demonstrates with perfect clearness and in well-marked contrasts red blood discs, blood platelets, the nuclei of white blood cells, the fine granules of the polymorphonuclear leucocyte, coarse oxyphil granules, basophil granules, and when present, erythroblasts, bacteria, the malaria parasite, and filariæ. It has been primarily designed for bedside work where rapid and certain methods are the main consideration.

In absolute alcohol we have one of the most reliable fixatives known, and eosin and methylene blue possess the requisite properties for demonstrating all the ordinary characteristics of normal and of pathological blood. Eosin itself, however, cannot under ordinary circumstances be made to stain certain cell granules and for this purpose various combination stains have been used; of these the most generally used are the Ehrlich-Biondi and Ehrlich's later triacid. These, however, are undoubtedly troublesome to use and require special fixing methods. When to a solution of eosin some solution of methylene blue is added a precipitate falls—brilliant grass-green crystals if alcoholic solutions and alcohol-soluble eosin (Grübler) are used, but amorphous and of a dark metallic-green colour if watery solutions and water-soluble eosin are used.

The eosin methylene blue mixtures at present in use, as far as I know them, are designed with a view to avoiding the precipitates which form when solutions of these dyes are mixed or after they have been kept a short while. These precipitates are, I believe, compounds of eosin (acid) and methylene blue (base).

The brilliant grass-green crystals obtained from alcoholic solutions are very sparingly soluble in alcohol in the cold, but more soluble in hot alcohol, from which they can be recrystallised in the same form. That they represent a definite compound body is, I think, rendered probable by the fact that the same crystals are obtained, though in varying amounts, however the proportion of the original ingredients is varied, and that the crystals so obtained have identical melting points—viz., 227° C. taken on the surface of mercury. The suggestion to test them in such ways I owe to Mr. E. White of St. Thomas's Hospital. These crystals from their sparing solubility in alcohol are not useful as a blood stain without previous fixation of the film. They are, as a matter of fact, soluble in chloroform and in aniline oil, the solutions in each case being of a dark violet colour.

The amorphous precipitate obtained from watery solutions of the two dyes is in its turn very sparingly soluble in water, but in alcohol it gives a blue solution with strong green fluorescence; it is more soluble in methyl alcohol. It is such a solution which I find to work admirably as a blood film fixative and stain. It is made up in the following way. Equal parts of a 1·2 per cent. to 1·25 per cent. solution of Grübler's water-soluble eosin, yellow shade, in distilled water and of a 1 per cent. solution of Grübler's medicinal methylene blue, also in distilled water, are mixed together in an open basin (not in a flask) and thoroughly stirred with a glass rod. The mixture may with advantage be left for 24 hours. It is next filtered and the residue is dried either in the air or more quickly in an incubator or water oven. I have dried it at 55° C. without harm. When quite dry the residue is scraped off the filter-paper and is powdered. It is then shaken up with distilled water and washed on a filter, when the washings should be of a thin dirty-purplish colour. Finally, it is again dried and powdered and may be stored in suitable bottles. For use, thoroughly shake up 0·5 gramme of the powder in 100 cubic centimetres of pure methyl alcohol (E. Merck "for analytical purposes")[1] and then filter. The solution keeps well.

Cover-glass preparations are made in the ordinary way and on to them as soon as the films (which should be extremely thin) are dry a few drops of the staining and fixing solution are poured, no previous fixation being required; it should, however, be noted that it is essential to the correct working of the stain that the cover-glasses used should be absolutely clean and should have no trace of acid or alkali on them. After they have been cleaned and well washed in distilled water they should be kept in absolute alcohol only. The specimen is covered with a watch-glass to prevent evaporation and consequent precipitation. In from one to three minutes the stain is rapidly poured off and the specimen is at once rinsed in *distilled* water till the film has a pink colour which usually occurs in from five to 10 seconds. It is then dried either very high

[1] Certain other brands work quite well, but to most of the less pure preparations it is necessary to add absolute ethylic alcohol in greater or less amount to reduce their acidity and to obtain proper fixation.

up over a flame or (better) by agitation in the air and is mounted in xylol balsam.[2]

The red discs are of a terra-cotta colour; the nuclei of the white corpuscles are blue; the platelets are mauve; the granules of the polymorpho-nuclear white cells and of myelocytes are red; the granules of the basophils (mast cells) when present are dark violet; and bacteria, filariæ, or malaria parasites are blue. If the specimen has been washed in tap water and not in distilled water the red colours are more pronounced and the blue of the white cell nuclei is almost washed out, while the dark blue of the bodies of the smaller hyaline white cells (lymphocytes) stand out in strong contrast to the now pale nucleus.

It seems to me that the results obtained by this method rather point to the granules of the polymorpho-nuclear leucocytes being basic—i.e., oxyphil—a fact which seems still disputed by some.

The differential staining results from the decomposition of the compound substance by the various elements of the blood, those parts which are acid combining with the basic colouring matter and those which are basic with the acid. That the stain is readily so split up is seen by adding weak acids or weak alkalies to such a watery solution of it as can be made—acids turning the solution blue and alkalies changing it to a pink, the stain acting, in fact, as a fairly delicate indicator. The same result is brought about by heating such weak watery solutions, which turn blue on warming, the original colour returning on cooling.

The stain may be equally well-made by dissolving the eosin and the medicinal methylene blue directly in absolute methylic alcohol and mixing them in the proportions given above—viz., 125 cubic centimetres of a 0·5 per cent. solution of the eosin and 100 cubic centimetres of a 0 5 per cent. solution of the medicinal methylene blue. Although this gives quite as good results the simpler method for ordinary practice is obviously to make a solution of the compound body which may be purchased in the solid state from Mr. R. Kanthack, 18, Berners-street, W., who also supplies the solution ready for use.

St. Thomas's Hospital.

NOTES ON A CASE OF RAPIDLY FATAL GLYCOSURIA IN A SUBJECT OF FRIEDREICH'S DISEASE.

BY W. HARRIS BEST, L.R.C.P. LOND., L.S.A.

THE patient, a girl, aged 14 years, commenced at the age of seven years to suffer from difficulty in walking and loss of power in the legs and from that time the train of symptoms characteristic of Friedreich's ataxy slowly developed, following exactly the same course as in the case of a sister two years older. There was complete ataxic gait, with extreme talipes and loss of coördination in movements of the hands. Lateral curvature of the spine and certain involuntary movements of the head as well as complete absence of knee-jerks were other signs present. With reference to the family history, a great uncle on the father's side was said to have suffered from difficulty in walking at the age of seven years and this was followed in the course of time by paralysis of the lower limbs, but he lived to the age of 50 years. The father and mother were both healthy. The course of the patient's final illness was as follows. On August 23rd, 1898, whilst seeing another member of the household I was consulted for the first time with reference to the patient's indisposition. The mother had noticed her daughter getting thinner for the past fortnight—that is, since her return from a seaside holiday. By a curious coincidence the last case of diabetes which occurred in my practice came on immediately after the patient's return from his annual seaside holiday. On questioning her I found that there were marked thirst and polyuria. She got out of bed at least three times at night and each time passed a fair quantity of urine. The bowels were moved regularly every day, the tongue was covered with a light brown fur and was rather dry with red margins. The skin was dry and harsh. There was a fair colour in the cheeks which was diffused over the face though at times she was pale. Examination of the chest failed to find any lung disease. There was a slight mitral systolic bruit heard over the heart's apex but no displacement of the apex beat or other abnormality of the heart. She was emaciated. The pulse was 60 and fairly full and regular and the temperature was subnormal. The quantity of urine passed in 24 hours was about four quarts; it was of light colour but rather turbid and acid in reaction; the specific gravity was 1045. On testing with freshly prepared Fehling's solution the brick-red discolouration showed immediately; the dark brown, on boiling with liquor potassæ as in Moore's test, showed equally well. The same applied to the picric acid test, the discolouration in the latter being very opaque. There was no albumin in the urine. On the following day (the 24th) she was placed on diabetic diet, though allowed a small quantity of toast at first. A quarter of a grain opium pill was given three times a day and Vichy water two or three times daily. She took a good proportion of meat with plenty of fat among other things. On the 25th—that is, after one day's treatment—the more troublesome and obvious symptoms, such as thirst and languor, commenced to abate. On the 26th Dr. F. J. Smith was called in consultation. He confirmed the diagnosis and advised a continuation of the same treatment with the addition of 10-grain doses of sodium salicylate three times a day. He also agreed with the diagnosis of Friedreich's disease in both girls. Dr. Smith was much interested in the case and I am indebted to him for some valuable hints as to treatment, &c. On the 27th the improvement was maintained; less urine was passed and the patient had been only disturbed once during the night. Examination of the urine, however, showed little change. On the morning of the 28th she appeared still to be improving and was quite cheerful. In the afternoon abdominal pain with some diarrhœa and sickness came on, much prostration resulting. These symptoms were followed in a few hours by sighing respiration, the breathing being deep and loud. There were extreme coldness of the extremities, small pulse, and all the signs of marked collapse accompanied with short paroxysms of dyspnœa, but the patient could very easily be aroused from the stupor. The acute bowel symptoms quickly subsided though slight vomiting still occasionally occurred. The odour of the breath was decidedly peculiar and suggestive of that described in text-books as accompanying diabetic coma. All the ordinary means of stimulation appeared to be useless though many were tried, such as mustard poultices to the chest and brandy, ether, and strychnine hypodermically administered. Though the pulse seemed to momentarily improve after giving by the mouth a strong solution of ammonia in small doses well diluted with cold water, this had to be discontinued through sickness and the bowel was too irritable to retain any saline solution which was injected. The patient was not delirious at any time; indeed, she retained consciousness to near the very end. She remained in this condition for three days, a certain amount of dyspnœa occurring up to the last. Unfortunately a post-mortem examination was not obtained.

In view of the paucity of our knowledge concerning the etiology and pathology of diabetes and of its association in this case with Friedreich's ataxy, the morbid pathology of which is comparatively well known, this case appeared to be worth recording though the absence of a post-mortem examination very considerably detracts from its possible value as a record. It is hoped that it may be of some little interest (brief and very incomplete as it is, partly through the unexpected and abrupt ending of the case), more especially to those engaged in investigating the nervous side of the origin of diabetes.

Remarks by Dr. F. J. SMITH.—This case seems to me to be well worthy of record because both diseases were so very distinctly marked. Both sisters I have since been given to understand have seen several eminent neurologists and, I believe, have been shown at societies as typical cases of Friedreich's ataxy, while about the glycosuria with acute diabetic coma there could be no doubt. To speculate on the advance of cord-sclerosis as affecting the nerves controlling visceral function would be rather futile when based on one case only, which may be but a coincidence, but should other similar cases be reported of a like nature this one would add considerable weight to the argument.

Ilford.

[2] If distilled water is not available tap water may be used provided the specimen be only momentarily immersed in it and then dried between filter-paper or rapidly over a flame. Pictorially such a specimen is not so perfect.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

CHARING CROSS HOSPITAL.

TWO CASES OF PERFORATING GASTRIC ULCER; OPERATION; ONE RECOVERY AND ONE DEATH.

(Under the care of Mr. JOHN H. MORGAN.)

ALTHOUGH it is probable that the statistics of the operation for perforation of an ulcer of the stomach which are based on published cases do not exactly represent the true mortality, yet the results obtained from a consideration of a complete series of cases under individual surgeons go far to show that the mortality is much less than might have been expected. For instance, Mr. A. E. Barker[1] had three recoveries in seven cases and it may fairly be said that nearly 50 per cent. of the cases recover after operation. The two chief data on which the prognosis can most safely be based are, firstly, the length of time which has elapsed between the perforation and the operation; and secondly, the presence or absence of food from the stomach. It is extremely rare for recovery to follow if more than 24 hours have elapsed before the abdomen is opened. A. J. Cabot[2] has recently recorded a case in which the operation was performed 24 hours after the perforation occurred, but as the stomach was practically empty hardly any extravasation took place and recovery ensued, the opening having been sutured. An important point which is now being much discussed is the best method of cleansing the peritoneum in these and similar cases and the consensus of opinion is on the whole in favour of wiping rather than flushing. By neither method is it possible to remove all the extravasated material and micro-organisms are sure to be left; it is probable that the peritoneum can dispose successfully of a certain number of germs. Mr. Morgan's two very interesting cases form a welcome addition to those which we have recently published. In the first case eight hours intervened between the perforation and the operation, in the second a whole day, and this of itself would go very far to account for the fatal result in the latter.

CASE 1.—A woman, aged 27 years, had for some time suffered from dyspepsia and symptoms of gastric ulcer, for which she had been treated by Dr. Sapp who, however, had not been consulted for six weeks, when on Oct. 8th, 1897, the patient went for a walk in the suburbs and on returning she became very ill and Dr. Sapp was sent for and found her in a state of very severe collapse. She was at once conveyed to the hospital where she was seen by Dr. Willcocks who summoned Mr. Morgan, and it was decided to operate immediately. It was ascertained that some months previously she had vomited blood but had been able to resume and to continue her work. When seen she was in a condition of great prostration but fully conscious. The respirations were rapid and entirely thoracic. The abdomen was universally distended, the liver was not perceptible, and there were great pain and tenderness, especially in the left hypochondrium. The pulse was rapid, small, and compressible. The operation was performed at 1 A.M., eight hours after the presumed occurrence of perforation. An incision about two and a half inches in length was made in the mid-line between the ensiform cartilage and the umbilicus. Upon opening the peritoneum some gas escaped and a quantity of turbid fluid mixed with semi-solid food and curdled milk was sponged out. The stomach was then brought up to the edge of the wound and searched. Upon the anterior surface between the greater and lesser curvatures and nearer to the cardiac than to the pyloric end was found a small, ragged slit or perforation about one-third of an inch in length through which the contents of the stomach were exuding. The walls around this were considerably thickened over an area about one and a half inches in diameter. Eight Lembert's sutures of fine silk were passed which securely closed the slit in the stomach wall and four broader sutures were passed above these to draw the wall of the stomach closer together and to avoid tension upon its weakened part. The cavity of the peritoneum was then carefully wiped with hot dry sponges in every direction, particular attention being given to the space between the liver and the diaphragm, from which many particles of food were removed. The abdomen was then flushed with weak boric solution followed by hot water. When the peritoneal cavity had been again sponged dry the abdominal wound was united by interrupted sutures of fishing gut and a small indiarubber drainage tube was inserted at the lower end. After dusting with iodoform the parts were dressed with cyanide gauze and blue wool and an abdominal binder was applied. The patient passed a quiet night but vomited twice during the morning following. Nourishment was given by means of enemata of peptonised milk and eggs. The following day the pulse was 108, full and strong, and the temperature was 100° F. Pain in the region of the incision made breathing difficult, but there was no pain, distension, or tenderness in the other parts of the abdomen. The surface of the tongue was excessively foul but moist; the patient slept well. On Oct. 10th there was still pain in the region of the wound and she suffered from slight cough. The dressings were renewed and the tube was removed, a piece of iodoform gauze being inserted in its stead. Only a small amount of pure blood-stained serum exuded. During the next 10 days she made steady progress; the temperature sank to normal, the cough ceased, and the tongue slowly became cleaner. Thirst was excessive and on the eighth day small quantities of milk and eggs were given by the mouth. On the thirteenth day the temperature rose to 101° and pain was complained of. On dressing the wound a small collection of foul-smelling pus was evacuated in which were seen some shreds of coagulated milk which had been lodged between the skin and the muscles in the abdominal wound. The collection was entirely superficial and the parts were syringed out with boric lotion and a drainage of gauze was re-inserted. The temperature again became normal in three days and the abscess cavity closed. By slow degrees the patient resumed a normal diet and at the end of six weeks she was walking about. It was some time before she left the hospital, as she still suffered occasionally from dyspeptic symptoms and pain, and she remained under the care of Dr. Green, as it was feared that there might be some recrudescence of the old ulceration or that a fresh ulcer might arise. All symptoms, however, at length subsided, and she ultimately left the hospital in fairly good health.

CASE 2.—A woman, aged 27 years, was admitted to hospital on Feb. 7th, 1898. She had suffered from dyspepsia for more than a year and had been treated for gastric ulcer. In the previous August she had vomited some blood but no recurrence had taken place until the day before admission, when after carrying a tea-tray upstairs she suddenly became faint and felt severe pain in the region of the stomach and between the shoulders. She was put to bed and she soon brought up a small quantity of blood. A medical man who saw her ordered immediate removal to the hospital, where she arrived on the following afternoon. She was apparently a stout, ruddy, well-developed woman. She lay on her back with her legs drawn up, the abdomen being markedly distended and the muscles rigid, especially upon the left side. Pain was referred more particularly to the left iliac region; liver dulness was obliterated. The pulse was small, running, 156, and only faintly perceptible at the wrist. The respirations were 40; the alæ nasi were working. Her expression was anxious but consciousness was unimpaired. On the arrival of Dr. Bruce and Mr. Morgan it was decided that though the patient was desperately ill the only chance for her life lay in immediate operation. Ether was administered and an incision was made about one inch to the left of the middle line. On puncturing the peritoneum a quantity of very foul gas escaped and on enlarging the opening a large amount of turbid yellowish fluid containing clots of milk and some more solid contents of the stomach gushed out. The stomach was drawn up into the wound and an ulcerated opening was soon found. This was large enough to admit a finger; the edges were ragged and there was a considerable extent of surrounding induration. It was

[1] THE LANCET, Dec. 5th, 1896, p. 1583.
[2] Boston Medical and Surgical Journal, August 11th, 1898, p. 134.

situated on the anterior surface at a short distance below the cardiac end. So bad was the condition of the patient that this had to be dealt with as rapidly as possible but it was ultimately closed with six silk sutures inserted by means of curved needles, and a few Lembert's sutures were used to draw the neighbouring parts together and so to cover in the edges of the ulceration. The peritoneal cavity was rapidly sponged and then flushed with hot boric lotion and hot water. The wound was closed as quickly as possible and every effort was made by means of injections of strychnia, enemata of brandy, and inhalations of oxygen to revive the patient, but she died a few hours after the completion of the operation. The post-mortem examination showed acute universal peritonitis.

Remarks by Mr. MORGAN.—There were published in the "Mirror of Hospital Practice" during 1898 five cases of laparotomy for perforating gastric ulcer, four of which were successful. It is to be feared that this does not represent the proportion of recoveries to operations performed, but it seems very desirable that successes and failures alike should be recorded in order that all details which may help to bring about successful results may be carefully considered. As pointed out in the article in THE LANCET of Dec. 31st, 1898, the prospects of success depend to a large extent upon the period which has elapsed between the actual perforation and the time when laparotomy is performed. The symptoms of perforation are almost unmistakeable and little time need be wasted on the question of diagnosis. On the other hand, there are conditions which may render even the most speedy operation almost hopelessly futile, such as the large size of the perforation itself, the previous state of the patient, and the nature and amount of the contents of the stomach which are poured out into the peritoneal cavity. Such conditions are well contrasted and exemplified in the two cases narrated.

LONDON TEMPERANCE HOSPITAL.

A CASE OF SEPTICÆMIA TREATED WITH ANTISTREPTOCOCCIC SERUM; RECOVERY.

(Under the care of Dr. LEONARD WILDE.)

THE failure which has in so many cases attended the injection of antistreptococcic serum in septicæmia is chiefly to be attributed to its indiscriminate employment in all forms of septic infection. It is essential that the presence of streptococci should be demonstrated, otherwise our knowledge of the value of this powerful therapeutic appliance cannot advance. There is reason also to believe, as Dr. Wilde points out in his remarks, that all streptococci are not affected by the same variety of serum. The case recorded below is very striking and the bacteriological evidence is very satisfactory. In the present condition of variation in the quality of antistreptococcic serum it is always advisable to mention the source of the serum employed. During 1898 we published several interesting cases of septic infection in which the antistreptococcic serum appeared to be of value.[1] A case of great interest appeared in the *Therapeutische Monatshefte* of September, 1898, p. 498, in which severe septic symptoms developed in a medical man who accidentally inoculated himself with pus from a boil. Recovery was rapid and complete after injections of antistreptococcic serum.

A youth, aged 18 years, robust and muscular, with a healthy personal and family history, was admitted under the care of Dr. Leonard Wilde on August 19th, 1898. Five days before admission he had begun to suffer from vertical and occipital headache which had commenced without apparent cause and rapidly increased in intensity. On admission he was conscious and able to answer questions but was somewhat apathetic and merely complained of severe headache. A complete examination showed no organic disease and no evidence of injury. The temperature was 101·6° F. and the stools and urine were normal. He remained in practically the same condition until August 26th when the pharynx and tonsils became swollen and inflamed and on Sept. 2nd they were covered with a pultaceous and offensive exudation. A bacteriological examination of the secretions of the throat showed a complete absence of diphtheria bacilli but an almost pure cultivation of the micro-organisms belonging to the streptococci group. An examination of the blood carried out by the Clinical Research Association gave negative results with regard to Widal's reaction for enteric fever, but streptococci were present in large numbers. The patient was now in a very critical condition; his temperature was 104°, he was semi-conscious, tremulous, passing everything under him, and seized with occasional convulsions, and it was evident that unless the noxious organisms circulating in the blood were destroyed without delay fatal results would occur. Accordingly on Sept. 3rd 10 cubic centimetres of antistreptococcic serum were subcutaneously injected every four hours. It was observed that for a short time after each injection the patient rallied and the pulse improved, but this was not maintained until the following injection. The dose was therefore doubled in quantity though reduced in frequency and eventually only 20 cubic centimetres were injected every 12 hours. On Sept. 5th considerable improvement was noted, the temperature had fallen to 101°, and the patient expressed himself as feeling better. On the 10th pneumonic consolidation of the upper lobe of the right lung supervened, accompanied by violent delirium and high pyrexia. The injections were, however, regularly continued until the 12th when, according to the report of the Clinical Research Association, the blood was pronounced to be sterile. There was then reason to hope that no further development of the disease would occur and that only its effects remained to be dealt with. The injections, which had now amounted to 345 cubic [centimetres of the serum, were discontinued. The patient was still in a precarious condition, superficial abscesses having appeared in many portions of the body and the condition of the right lung was throwing an additional strain on the heart. The throat, however, began to clear, and on the 17th the temperature commenced to fall, reaching normal about the 20th. After this he gradually improved, though convalescence was somewhat protracted owing to an attack of hæmaturia. His recovery was eventually complete and he was discharged on Nov. 16th. He was seen again on Jan. 15th, 1899, and with the exception of considerable pallor he appeared to be in good health.

Remarks by Dr. WILDE.—This case is interesting as belonging to a class of disease about which there has been considerable controversy as to the efficacy of serum therapy when employed as a germicide. It has not, I think, been claimed that antistreptococcic serum acts as an antitoxin as in the case of the antidiphtheritic serum but merely that it possesses bactericidal properties which may be applied in certain cases with a rational expectation of success. Whether the patient recovered because of the administration of the serum or simply during such administration I have no desire to state, but the facts have been recorded as they occurred and those interested in the subject can form their own opinion. The difficulty of successfully applying the antistreptococcic serum rests on the fact established by Van de Velde that there are several races of streptococci, none of which affords protection against the other, and until a serum has been obtained which includes the products of each race the success of the treatment will depend upon whether the organisms to be attacked are of the same race as those from which the serum injected has been derived.

[1] THE LANCET, Feb. 19th, 1898, p. 502, and March 19th, p. 779.

GLASGOW CENTRAL DISPENSARY.

A CASE OF ACUTE TUBERCULOUS CHOROIDITIS FOLLOWING OPERATIVE TREATMENT OF TUBERCULOUS LESIONS IN A LIMB.

(Under the care of Mr. G. H. EDINGTON.)

IT cannot be questioned that a surgical operation on a tuberculous lesion is a possible cause of a general diffusion of the disease, and there is little doubt that such a dissemination does occur, though very few cases appear to have been recorded; yet most surgeons must be able to call to mind cases which could be most easily explained on this supposition. Scraping a tuberculous lesion with a sharp spoon seems to be more likely to give rise to general infection than any other form of operation. In Mr. Edington's very interesting case the interval (four days) between the operation and the first manifestation of anything wrong with the eye is rather short, and we are inclined to agree that the choroidal lesion was not new.

A boy, aged three years, was taken to the Glasgow Central Dispensary on April 14th, 1897, on account of an ulcerated

condition of the left hand with swelling at the elbow and knee of the same side. The patient had been a fairly healthy child till he suffered from measles about two months before being seen at the dispensary. Either during convalescence or somewhat later a swelling appeared in the palm of the left hand. This was opened and had continued to discharge since. The time of the commencement of the condition of the knee and elbow was not known definitely. Since the attack of measles he had "failed" greatly according to his parents' statement. The mother was an apparently healthy woman, while the father was tall, well-built, and very robust. Two years previously he suffered when in the China seas from sudden blindness which lasted for a few weeks and then left him with apparently unimpaired vision. Besides the patient there had been one child who died when about a year old from what appeared to have been tuberculous meningitis. On examination the patient showed evidence of rachitic condition; this was chiefly marked in the head which was of the broad type. On the palmar surface of the left index finger and near the metacarpo-phalangeal joint there was an ulcer covered with a scab and surrounded by thickened tissues. The cubital gland was enlarged and softened and there was thickening of the lower half of the shaft of the humerus. The elbow-joint was free. The left knee presented synovial thickening giving the joint a globular appearance. On April 17th chloroform was administered and the palmar ulcer was scraped with Volkmann's spoon and found to be part of a tuberculous process involving the sheath of the flexor tendon of the index finger. The cubital gland was incised and watery pus was evacuated, followed by cheesy material, and a tuberculous membrane was removed by the spoon. Four days later the parts were dressed and looked well. There was, however, a dimness of the left eye, especially of the cornea. This was not present prior to the operation and it was thought that it might be a corneitis following an incautious dropping of chloroform. On the other hand, taken in conjunction with the enlargement of the lower end of the humerus, the probability of the corneal condition depending on syphilis was considered.[1] The child was therefore given one grain of mercury with chalk twice a day. By May 1st (a fortnight after the operation) the condition of the eye which was unimproved had become the leading feature of the case. There were then photophobia, enlargement of the eyeball (without tenderness), a greyish condition of the cornea, decided conjunctival injection, and some catarrh. Since the last note the patient had been very heavy and had lost his appetite. He was thinner, but the local conditions (knee, humerus, &c.) were no worse. On account of the progressive nature of the affection of the eye the child was sent to the Charlotte-street department of the Glasgow Eye Infirmary under the care of Dr. Maitland Ramsay. Dr. Ramsay found the condition to be one of purulent choroiditis and expressed the opinion that it was probably of tuberculous origin. He enucleated the eyeball on May 20th. The child made an uneventful recovery and was dismissed from the eye infirmary well as regards the orbit and with the wounds of the hand and elbow healed. The eyeball was examined by Dr. Leslie Buchanan and the choroid was demonstrated by him to be the seat of a tuberculous process.

Pathological note by Dr. LESLIE BUCHANAN.—The eyeball was found to be considerably enlarged by the formation of an ectasia of hemispherical shape at the upper and inner quadrant near the equator and measuring 14 millimetres across the base. On the globe being bisected by an oblique antero-posterior cut it was found that the cornea was clear and that the iris was free, having a good anterior chamber. The posterior chamber was abolished by total posterior synechia. The lens was of normal size, occupied the normal position, and was clear. There manifestly had been a moderately severe irido-cyclitis as both the iris and the ciliary body were covered by a layer of fibrinous exudation and there was a considerable amount of the same material present in the anterior chamber. The retina was totally separated from the choroid and was pushed tightly forwards against the lens. Although moderately free from evidence of inflammatory action in front, the retina seemed to be involved in a dense mass of exudation behind, passing as it did into a thick column which passed backwards to the entrance of the optic nerve and spread out all round on to the choroid. The ectasia was found to be a dilatation of an infiltrated and thickened sclerotic. There was a mass of tissue joined to the base of the before-mentioned column and to the choroid to the inner and upper side of the entrance of the optic nerve, which mass appeared to be of a different consistence from the rest of the column, presenting signs of degeneration. The choroid was altered in the ectasia but not thickened, whilst over the rest of the globe it was much thickened. There was no evidence of external propagation of the growth.

Microscopic examination.—The microscopic examination of the anterior part of the eyeball calls for no special comment here. It will be sufficient to say that there was a general and simple inflammation of the iris and ciliary body but no evidence of special inflammatory process. The posterior part of the column which passed from the sclera to the lens was found to be composed of densely packed round cells with recognisable remains of retinal structure and in a few places formations typical of tubercle. The same round-cell exudation with tuberculous characteristics was found in the thickened choroid, and the degenerated mass, which measured eight millimetres across, was found to be composed of much the same structure, only that in several parts the cells were so far degenerated that they would not stain, their outlines being utterly destroyed. The giant cells which in almost every instance were found in the centre of the tuberculous structures were of large size and had their nuclei arranged round the periphery. Special staining failed to bring out tubercle bacilli.

Remarks by Mr. EDINGTON.—The above case has appeared to me to be of sufficient interest to be recorded on account of the question which it raises of dissemination as a result of partial operation for tuberculous disease. The remarks which I have to make on the case may very properly be preceded by a short mention of the views on choroidal tuberculosis of some of the writers on diseases of the eye. Macnamara and Hartridge[2] mention tuberculosis of the choroid as occurring in two forms: (1) chronic choroiditis, which may be primary or associated with tuberculosis of the brain—as a rule this form is insidious in its progress and unilateral in its distribution; and (2) miliary tubercle, which is much more common and usually part of a general tuberculosis. It affects both eyes commonly and the tubercles are numerous. Sometimes the condition is only seen in the advanced stage of a tuberculosis and at first causes but little pain or discomfort. Berry[3] describes the following forms: (1) miliary which is acute and always secondary to tuberculosis in other organs is generally bilateral, probably never accompanies pulmonary tuberculosis alone, and appears to have no definite relation to tuberculous meningitis; and (2) chronic tuberculous choroiditis which is much rarer, unilateral, and sooner or later associated with similar diseases of the brain ending fatally. Panas[4] also speaks of: (1) miliary or disseminated, almost always accompanying meningeal tuberculosis and appearing in the posterior part of the choroid; and (2) circumscribed, in the ciliary region, usually associated with pulmonary phthisis, but may be primary. At first there is scarcely a perceptible reaction and in a child with meningitis it is often overlooked. If it reaches the ciliary region tuberculosis of the choroid may resemble panophthalmitis, and in children this acute variety is more common. Noyes[5] declares that choroidal tubercle occurs most commonly in tuberculous meningitis and general miliary tuberculosis, but he mentions a case recorded by Fraenkel in which the choroidal condition preceded all the symptoms of general tuberculous deposit by six months. Berry[6] quotes Horner's view that the choroid acts as a substitute for pia mater and that choroidal tubercle occurs least commonly in children in whom meningitis is likely. It will be seen from the above that although tuberculosis of the choroid may occur primarily and alone, yet it is most often the accompaniment of tuberculous lesions elsewhere. It may exist imperceptibly for a time and then take on the character of an acute irido-cyclitis. Opinions differ as to its accompanying or replacing tuberculous meningitis. The chronic form tends to be unilateral and the acute form to affect both eyes. In connexion with the question of syphilis which entered into the diagnosis von Arlt[7] may be mentioned who, speaking of scrofulous iritis, states that he

[1] Henoch: Lectures on Children's Diseases, New Sydenham Society, 1888, vol. i., p. 98.

[2] Diseases of the Eye, p. 225, London, 1891.
[3] Diseases of the Eye, p. 180, Edinburgh, 1889.
[4] Maladies des Yeux, vol. i., p. 425, Paris, 1894.
[5] A Treatise on the Diseases of the Eye, p. 263, London, 1882.
[6] Loc. cit.
[7] Clinical Studies of Diseases of the Eye, p. 266, 1885.

has seen undoubted cases of scrofula which could be attributed to no other cause than hereditary syphilis. While Panas mentions the acute termination to choroidal tubercle, especially in children, yet this event, taking place so very shortly (four days) after an incomplete operation on the limb, must raise the question either of a dissemination or a stirring-up of a quiescent lesion. Watson Cheyne[9] instances scraping as likely to cause dissemination of tuberculosis, but it is more likely that the choroidal lesion was not a fresh one but a chronic condition stirred up. The unilateral distribution of the lesions was a curious feature in this case, but Dr. Gibb of Paisley, under whose care the patient now is in the infirmary there, informs me that he recently excised the boy's left elbow at the same time observing that the right showed signs of tuberculous disease.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Congenital Hypertrophy of the Pylorus.—The "Buffy Coat."—Alveolar Sarcoma of the Rectum.—Dilatation of the Œsophagus.—Colloid Carcinoma of the Stomach.—Papillomatous Tumour of the Umbilicus.—Exhibition of Specimens.

A MEETING of this society was held on Feb. 7th, Dr. RADCLIFFE CROCKER, Vice-President, being in the chair.

The VICE-PRESIDENT referred with much regret to the death of Professor Coats of Glasgow and the society directed that a letter of sympathy should be sent to Mrs. Coats.

Dr. STILL reported three cases of Congenital Hypertrophy of the Pylorus. The first case was that of a boy, aged 12½ weeks at death, in whom vomiting began at the end of the sixth week (some previous regurgitation of food had been thought natural by the mother). The vomiting persisted and increased until death; the thickened pylorus was distinctly felt shortly before death. The necropsy showed great hypertrophy of the stomach and pylorus, the latter being normally patent. The second case was that of a boy, aged 15 weeks at death. Vomiting began at six weeks of age and increased until death, with constipation and subnormal temperature. Marked peristalsis of the stomach appeared and the thickened pylorus was distinctly felt the day before death. At the necropsy the stomach was found to be dilated and hypertrophied; the pylorus especially was greatly thickened; its lumen was normally patent. The third case was that of a boy, aged 15 weeks at death, in whom regurgitation of food began at seven days. The bowels were costive and vomiting increased. Marked peristalsis of the stomach appeared and the thickened pylorus could be felt distinctly about a fortnight before death. The necropsy showed great hypertrophy of the stomach and pylorus and some also of the œsophagus. The lumen of the pylorus was normally patent. In all these cases the thickening was almost entirely muscular and chiefly in the circular layer. In Case 3 the submucosa also was abnormally thick. Dr. Still in discussing the pathology of this condition thought that a fuller study of the normal pylorus at this age was much needed. He had made some observations from which it was evident that there was considerable variation in the thickness of the normal pylorus in infancy and that this variation was chiefly in the circular layer of the muscular coat. Further, it would appear that the lumen of the normal pylorus as measured post mortem was often not more than from 3·5 to 4 mm. Much caution therefore was necessary in judging a slight degree of hypertrophy and it was evident that the lumen in many, at least, of the cases of congenital hypertrophy of the pylorus was within the normal limits when muscular contraction was absent. Four views had been propounded of the pathology of this condition: (1) that it was entirely extra-uterine and due to spasm from some irritant; (2) that it was due to a developmental hyperplasia; (3) that a primary congenital stenosis was followed by compensatory hypertrophy; and (4) that the hypertrophy was due to over-action from a functional disorder of the nervous mechanism in utero. Dr. Still thought that in considering the pathology of this condition there were two facts in particular which could not be overlooked—the occasional occurrence of an "idiopathic hypertrophic stenosis of the pylorus" in adults and the increasing evidence that some of the cases of congenital hypertrophy of the pylorus recovered. On the whole, it seemed most probable that the condition was intra-uterine in its origin, but the cause must be a potentially transient one and therefore a functional disturbance seemed more in accordance with the facts than a vice of developmental growth. There were moreover cases which seemed to support this view by analogy, particularly cases in which the œsophagus was found to be hypertrophied without any demonstrable cause.

Dr. E. CAUTLEY showed three specimens of the same condition from infants aged respectively 15, eight, and seven weeks. Vomiting had been almost constant since they were three weeks old. In none was any etiological factor discoverable. Dr. Cautley held that this was a pre-natal condition and that the hypertrophy took place in the circular muscular fibres. The stenosis was largely due to plication of the mucous membrane by the muscular spasm. He thought that hyperplasia of the muscular fibre took place in the fœtus.—Dr. ROLLESTON showed a similar specimen taken from a child who died when eight weeks old. He agreed that the hypertrophy was probably due to spasm. Metzler, however, had doubted whether spasm had ever been shown to cause hypertrophy in the case of unstriped muscle and he asked for an expression on that point.—Dr. F. E. BATTEN said that he had recently had what appeared to be a case of this kind under his care. The pylorus was palpable and there was continuous vomiting and constipation. The child was fed by a nasal tube, as recommended by Dr. John Thomson, and the vomiting ceased; before the child left hospital it had been fed by the mouth without serious vomiting for two weeks. This improvement, however was not kept up and a week ago the mother reported that the vomiting had returned.

Mr. S. G. SHATTOCK submitted a new interpretation of the phenomenon known as the "Buffy Coat" which he illustrated by microscopic and other preparations, maintaining that the principal factor was rapid clumping of the red corpuscles and not, as commonly taught, simple retardation in coagulation. He believed that this clumping was due to some agglutinating substance which varied in amount in different animals. In the cat it was scanty, and if cat's blood was received into an equal quantity of salt solution and clotting deferred by keeping in ice no well-formed buffy coat resulted. If, on the other hand, the cat's blood was received into an equal quantity of horse's blood which was rich in agglutinating substance, subsidence of the clumped red cells quickly commenced and a well-formed buffy coat resulted if the tube were kept in ice. A similar effect was observed if horse's serum were mixed with human blood. But the most striking clumping was seen when serum from the blood of a patient suffering from pneumonia was added to a hanging drop of human blood. (A specimen was shown.) He regarded the agglutination of the red discs as due to the same substance which clumped the diplococci of pneumonia in living cultures and therefore was a form of Durham's, or more correctly of Widal's, reaction, since it was obtainable during the stage of infection.—Mr. D'ARCY POWER observed that Mr. Shattock's observations tended to reinstate the older physicians who were accustomed in pneumonia to bleed repeatedly until the blood no longer gave a buffy coat.

Mr. STANLEY BOYD showed Microscopic Sections of a New Growth of the Rectum which had the clinical characters of a columnar epithelioma but which histologically seemed to be an alveolar sarcoma. The patient was a woman, 35 years of age. Almost every one of the large cells of which the growth consisted seemed to be in a separate space in the delicate fibrous stroma. The case was interesting also because the cæcum perforated on the third day after colotomy had been performed and obstruction was freely relieved. She lived 30 days after the perforation, suffering chiefly from dyspnœa due to distension of the abdomen by intestinal gases. Post mortem the gas was found to be contained in a huge cavity in which no viscera were visible. They lay behind a thick layer of lymph and though compressed were healthy. There were no signs of peritonitis behind the layer of lymph. The tumour was referred to the Morbid Growths Committee.

Dr. LAZARUS-BARLOW showed a Dilated Œsophagus of a man, aged 28 years. It was the seat of a fusiform dilatation which at its greatest circumference measured three and a half inches. The history was indefinite, but it appeared

[9] Tuberculous Disease of Bones and Joints, p. 168, Edinburgh, 1896.

certain that difficulty of swallowing and frequent vomiting which had led to the surgical passage of œsophageal bougies had existed for at least a year. The chief symptoms were immediate regurgitation of food upon its ingestion and extreme emaciation. Laparotomy was performed upon the suspicion that there was disease of the stomach, but nothing abnormal was found in the stomach or elsewhere. The patient died on the ninth day after admission and the third after laparotomy from asthenia. At the necropsy general miliary tuberculosis was found, but it was not extensive and was chiefly confined to the upper lobe of the left lung. It could only be regarded as an adjuvant cause of death. The muscle of the œsophagus was greatly hypertrophied and had undergone no change that might not fairly be ascribed to post-mortem decomposition. Since it had been recently shown by Langley that the vagus contained fibres which on stimulation lead to dilatation of the lower end of the œsophagus the vagus was examined in this case by Dr. S. F. Grünbaum, but sections presented no definite evidence of either recent or former degeneration of the nerve.—Dr. ROLLESTON showed, for Dr. WARDROP GRIFFITH, a similar specimen. Dr. Rolleston thought that the cases were best explained not on the supposition of the existence of a "cardiospasm" but of defective action of the longitudinal fibres of the œsophagus so that the cardiac orifice did not open. Dr. Griffith had suggested that the atonic œsophagus might be further dilated through the negative pressure in the thorax.—Dr. STCLAIR THOMSON mentioned the case of a patient who had suffered for many months from Dysphagia and Vomiting supposed to be due to Malignant Disease. He believed that the œsophagus was dilated in this patient and as one vocal cord was paralysed from implication of laryngeal nerves he thought that similar involvement of the vagus might be the cause of the dilatation of the œsophagus. He asked Dr. Lazarus-Barlow whether he had examined the nerves at the base of the skull in his case.—Dr. PARKES WEBER also asked for information as to the condition of the brain, observing that symptoms of stricture of the cardiac orifice might be produced by chronic internal hydrocephalus in the adult.—Dr. LAZARUS-BARLOW said that he had not examined the brain.

Dr. R. G. HEBB showed a specimen of Colloid Cancer of the Stomach from a woman, aged 36 years, who had had pain and vomiting for some months before death. No tumour could be felt during life. The œsophagus was found to be hypertrophied and slightly dilated and there were many corn-like elevations in the walls. The walls of the stomach were infiltrated with colloid cancer and the pyloric half was ulcerated. There was enlargement of the glands just below the diaphragm. On section they contained large spherical carcinomatous cells, but there was no colloid degeneration.—Dr. LAZARUS-BARLOW asked whether the "corns" on the œsophageal lining were looked on as malignant and as indicating an extension along the course of the lymphatics.—Dr. HEBB, in reply, said that he had not examined the elevations microscopically, but he regarded them as simple thickenings and not malignant.

Dr. C. D. GREEN showed a Papillomatous Tumour of the Umbilicus which he had removed by operation from a woman 50 years of age. The macroscopical characters of the specimen were simply those of an ordinary cutaneous papilloma but the histological examination showed the presence of gland structures and of unstriped muscular tissue. The majority of the gland structures were lined with long columnar epithelium with large deeply staining nuclei situated quite near the basement membrane and were considered to be reproductions of the intestinal glands known as Lieberkühn's crypts, differing from the normal intestinal structures in their exaggerated dimensions and in the absence of any definite arrangement. The surface of the tumour was covered with stratified epithelium of the cutaneous type, the superficial layers of which had undergone keratinisation, and this superficial epithelium sent processes into the deeper parts giving rise to a papilliform appearance. No cutaneous gland structures were seen. Dr. Green considered that the tumour was derived from the remains of the vitello-intestinal tract, but that it differed from other published cases of the same nature in being covered with epithelium of the cutaneous type and as regarded the age of the patient. The specimen was referred to the Morbid Growths Committee.

The following card specimens were shown:—

Dr. CAUTLEY, Dr. MORLEY FLETCHER, and Dr. ROLLESTON: Specimens of Congenital Hypertrophy of the Pylorus.

Dr. LEONARD GUTHRIE: A specimen of Meckel's Diverticulum forming part of an Umbilical Hernia.

Dr. H. B. HICKMAN, Dr. A. F. VOELCKER, and Dr. PARKES WEBER: Specimens of Carcinoma of the Stomach.

OBSTETRICAL SOCIETY OF LONDON.

Annual Meeting.—President's Address.—Appointment of Officers.—Exhibition of Specimen.

THE annual meeting of this society was held at 20, Hanover-square, W., on Feb. 1st, Dr. C. J. CULLINGWORTH, President, being in the chair.

The reports of the treasurer, honorary librarian, and chairman of the Board for the Examination of Midwives having been read, received, and adopted the retiring President, Dr. CULLINGWORTH, delivered his Annual Address. He said that although the work of the secretaries in that society was by no means a sinecure and was, indeed, heavier and more exacting than anyone not intimately acquainted with the official nature of the society would suppose, there was one duty from which they were exonerated—namely, the preparation of an annual report. It had always been usual in that society for the President at the close of his year of office to give an account of the condition of the society and of the work done during the year. Following this long-established custom he had to begin by deploring a further slight falling off in the number of Fellows. The total number of Fellows on the roll on Jan. 1st, 1898, was 711, comprising 11 honorary and corresponding Fellows and 700 ordinary Fellows. During the year the society had lost 12 Fellows by death (including a death which occurred in 1897 and had been accidentally overlooked) and 30 by resignation. 22 new Fellows had been elected. Hence the number on the roll had been reduced by 19. The present total (Jan. 1st, 1899) was 692, of which number 10 were honorary and corresponding Fellows and 682 ordinary Fellows. This diminution in numbers ought not to be and would not be if only each one would bestir himself in the way of beating up recruits. During the past year the Council, acting in conjunction with the Board for the Examination of Midwives, had drawn up a code of rules and regulations to be observed by midwives holding the society's certificate. These rules had now been printed and circulated and a copy would be supplied to every Fellow of the society in the form of an appendix to the forthcoming volume of Transactions. He (the President) regarded the preparation and issue of these long-wanted rules as quite the most important event which had happened in the society during his term of office. In the matter of its examination for midwives the society continued to suffer from a certain amount of professional opprobrium which, though entirely undeserved, was probably in some degree responsible for the decrease in their numbers. He wished once more to remind their professional brethren that the society undertook the work from a sense of public duty and merely as a temporary expedient after having tried in vain to induce the Government to move in the matter; he assured them that it would be only too glad to relinquish it whenever the State could be prevailed upon to take upon itself functions which properly belonged to it and which it alone could adequately fulfil. The President proceeded to review the scientific work of the society during the past year, giving a brief abstract of each of the papers read, 15 in number (10 obstetrical and five gynæcological), and classifying the specimens shown in groups according to the particular subject which it was the intention of the exhibitor to illustrate. The names of the deceased Fellows were then announced, each announcement being followed by an obituary notice. The first and longest notice had reference to the late Dr. Charles West, an honorary Fellow and Past-President of the society, and the other names mentioned included those of Dr. Karl Liebman of Trieste, Dr. Leonard Remfry, Brigade-Surgeon Joseph Johnston, Mr. E. Arnold Praeger of California, Deputy-Surgeon-General John R. Miller Lewis, M.D. Glasg., Dr. George Roper, Dr. John Wallace of Liverpool, Dr. W. F. Cleveland, Dr. C. E. Fitz-gerald of Folkestone, Mr. Alfred Kebbell of Flaxton, York, and Professor A. A. Kanthack of Cambridge. The address concluded with a word of farewell and of thanks to the Fellows and especially to the President's colleagues in office for the help and support uniformly accorded to him in the conduct of the society's business both in the general meetings

and in the council room. "In resigning this chair," said Dr. Cullingworth, "it is a satisfaction to me to know that its next occupant is to be one of whose contributions to scientific gynæcology all British gynæcologists are justly proud and whose irrepressible but never unkindly humour may be relied upon to relieve the dulness of even your very driest debates. I congratulate you and I congratulate him. The best I can wish him is that his tenure of this high office may be as pleasant and as peaceful as mine has been."

The following officers and members of council were appointed for the year 1899:—President: Mr. Alban Doran. Vice-Presidents: Dr. John W. Byers (Belfast), Dr. William Radford Dakin, Dr. William Duncan, and Dr. Jamieson Boyd Hurry (Reading). Treasurer: Dr. James Watt Black. Chairman of the Board for the Examination of Midwives: Dr. Percy Boulton. Honorary secretaries: Dr. John Phillips and Dr. Herbert R. Spencer. Honorary librarian: Dr. Amand Routh. Other members of the Council: Dr. Augustus W. Addinsell, Dr. John Ford Anderson, Dr. A. H. Freeland Barbour (Edinburgh), Dr. George Francis Blacker, Dr. Robert Boxall, Dr. Thomas Watts Eden, Dr. Angus Fraser, Dr. Arthur Edward Giles, Dr. Thomas Crawford Hayes, Dr. Ernest Herman, Dr. John Dysart McCaw, Dr. Arthur Nicholson (Brighton), Mr. Richard Pinhorn (Dover), Dr. William Loudon Reid (Glasgow), Dr. Charles Hubert Roberts, Dr. George H. Drummond Robinson, Dr. William Japp Sinclair (Manchester), and Dr. Arthur Francis Stabb.

On the nomination of the council the following distinguished persons were unanimously elected to the honorary Fellowship of the society—viz., Professor Olshausen of Berlin, Dr. Budin and Dr. Pinard of Paris, Dr. A. E. Martin of Berlin, Dr. H. Oldham of Bournemouth (an original Fellow and Past-President of the society), and Mr. Hutchinson of London.

Certain proposed alterations in the laws were then confirmed and the meeting concluded with votes of thanks to the retiring President, Vice-President, and members of council.

A specimen of Tubo-Ovarian Abscess was shown by Dr. CULLINGWORTH at the commencement of the meeting.

HARVEIAN SOCIETY OF LONDON.

Hygroma of the Neck.—Congenital Deformities of Limbs.—Mumps.—Middle-ear Disease.

A CLINICAL meeting of this society was held on Feb. 2nd, the President, Mr. HENRY JULER, being in the chair.

Mr. RAYMOND JOHNSON showed a girl, aged eight years, who was the subject of a large congenital Cystic Hygroma of the Neck. She had been under observation since the age of 16 months and the tumour had progressively but slowly diminished in size. On three occasions the tumour had been the seat of attacks of violent acute inflammation, during which the swelling became enormously increased in size and there was rather severe constitutional disturbance. On each occasion the inflammation subsided spontaneously and was followed by a more rapid shrinking of the tumour. One of the largest cysts had been treated by drainage, but in view of the very marked tendency of the tumour to shrink and its extent and diffuse character it was not proposed to make any attempt to remove it by operation.—Mr. D'ARCY POWER said that such growths when they occurred in the neck seemed always to involve the lobule of the ear, as the early photographs showed had been the case in this child. At the present time, however, the lobule of the ear was separated from the growth by a considerable distance. Mr. Power alluded to four other cases of a similar kind in the same situation upon which he had lately operated. He had been able to remove the bulk of the growth in three of the cases, but in the fourth it was so extensive and it involved such important structures that much had to be left behind. Yet in this case the remainder of the growth absolutely vanished in the course of a few months and after attacks of lymphangitis like those described by Mr. Johnson. Mr. Power stated, in reply to a question by Dr. Joll, that these tumours were known to the older pathologists as hygromata or barren cysts. Hygroma, from the Greek ὑγρός, because they were supple; and barren, because having only an endothelial lining they did not proliferate.

Mr. JACKSON CLARKE showed a girl, aged three years, who had several Congenital Deformities. When he first saw the patient at the age of six months the thumbs were firmly adducted into the palms and the forearms were abnormally curved with a forward concavity. There was also marked double equino-varus. About the middle of the forearms and legs there were depressed scar-like marks, one over the middle of each of the bones on the extensor aspect. In the legs a small nodule of bone could be felt beneath each of the marks. The mother said that the birth was "very dry." Mr. Clarke thought that the abnormalities were explained by a deficiency of liquor amnii allowing of abnormal intra-uterine pressure upon the fœtus. The deformities of the hands and feet completely recovered under gradual methods. Mr. Clarke wished to express his preference for such methods over procedures such as Phelps's operation which, in his opinion, was undesirable as applied to club-foot in children.—Mr. D'ARCY POWER asked Mr. Jackson Clarke whether he had been able to elicit any history of syphilis in this case or whether there was any evidence of placental inflammation. He thought that the dimpling had been caused by the presence of allantoic bands, for it was so exactly symmetrical. The irritation of the bands had led to the slight hypertrophy of the bone underlying each dimple.—Mr. JACKSON CLARKE replied that he had not been able to obtain any evidence of syphilis in his case, and in answer to a question by Mr. Johnson he stated that the feet had been treated with the splint which he usually employed in such cases—a strip of tinned iron applied to the outer side of the leg and foot and gradually bent so as to overcome the deformity.

Dr. EWART showed a case of Mumps with Marked Enlargement of the Spleen. The patient, a boy, aged 13 years, was admitted into hospital on the third day of the attack with a characteristic swelling of the left parotid. The affection remained limited to the left side and ran a mild course without pyrexia. The only complication was an enlargement of the spleen which persisted for several days and gradually subsided as the parotid gland returned to its normal size. Dr. Ewart had not found in text-books any reference to this complication which may perhaps sometimes occur unnoticed. In this case it gave rise to no symptoms. The dulness measured six and a half inches in the horizontal and five inches in the vertical direction. The enlargement took place upwards, the spleen projecting half an inch only below the costal arch. The spleen when percussed at the meeting was of normal size and yielded the "boxy" percussion note which, as recently pointed out, sometimes replaces the splenic dulness. A specimen of the blood had been stained for micro-organisms by Mr. Hunt with negative results.—Dr. C. O. FOWLER and Dr. MAGUIRE discussed the case and Dr. EWART replied.

Dr. G. WILLIAM HILL showed a young woman who had been the subject of Chronic Suppuration in the Middle Ear and who for two years had suffered from Facial Paralysis associated with Paralysis of the corresponding half of the Soft Palate. No evidence of diphtheria was obtainable. The interest of the case consisted chiefly in its bearing upon the question as to whether or not the muscles of the palate received any part of their nervous supply from the facial.—Dr. HERBERT TILLEY said that if the case was one of combined facial and unilateral palatal paralysis it would seem to point to the fact that the palate may have a double nerve-supply, the facial through the Vidian and the spinal accessory by the pharyngeal branches of the vagus. That the latter innervation is the most constant (and probably the sole one) had been experimentally proved beyond any doubt by Horsley and Beevor in monkeys, whilst clinical evidence was almost altogether in favour of the view. He then referred to three cases of the kind which had recently come under his notice.

Dr. EWART and Mr. E. L. HUNT described a case of Diphtheritic Membranous Tracheitis with temporary obstruction of the right bronchus in the adult, and exhibited a series of tubular casts of the trachea expectorated on the third, fourth and fifth days of the attack, by a woman aged 32 years who was now recovering after a pyrexial period of 19 days from a severe pulmonary catarrh due, as shown by repeated cultivation, to diphtheria. She had been injected on the third and on the fifth days with 4000 units of antitoxin. On the third day the laryngoscope had shown the presence of membrane immediately above the glottis. For several days there was loss of respiratory sounds and diminution of right respiratory movements. With the return of the respiratory function abundant râles developed. The patient was aphonic

for 15 days, but the cough was not "croupy" and there was no stridor or spasm of the glottis. An alarming attack of heart failure had occurred on the tenth day, but neither albuminuric nor paralytic symptoms have made their appearance.—Mr. E. L. HUNT gave details of the administration of the antitoxin.

PATHOLOGICAL SOCIETY OF MANCHESTER.

Cubitus Varus following Fracture of the Lower End of the Humerus.—Charcot's Joint Disease.—Tuberculosis of the Liver.—Ulceration of the Cæcum.—Exhibition of Card Specimens.

A MEETING of this society was held on Jan. 18th, Dr. R. B. WILD, President, being in the chair.

Mr. J. E. PLATT discussed the Pathology of Cubitus Varus following Fracture of the Lower End of the Humerus and illustrated his remarks by a number of skiagrams. After briefly referring to the various kinds of fracture which may occur in the lower end of the humerus he said that cubitus varus had been met with as a result of the following injuries: (1) oblique fracture of the external condyle extending into the elbow-joint, with permanent displacement downwards of the loose piece of bone; (2) oblique fracture of the internal condyle with displacement upwards of the loose fragment; (3) transverse supra-condylar fracture with tilting of the fragment, so that the trochlea lay at a higher level than the capitellum; and (4) separation of the epiphysis. It was stated that when cubitus varus followed separation of the epiphysis its pathology was more complicated and that the deformity might be produced in at least three different ways: (1) from the line of fracture in these cases being usually partly epiphyseal and partly diaphyseal, with frequently some inward displacement of the fragment (imperfect reduction under such circumstances would be very liable to lead to cubitus varus); (2) from rotation of the epiphysis around the convex end of the diaphysis; and (3) from irregular growth at the epiphyseal line after the union of the fracture. It had been found as a result of the examination of a number of cases of epiphyseal separation some years after the injury that in two patients cubitus varus had gradually supervened although the fracture had united without deformity in the first instance. This was attributed to the epiphyseal cartilage having been permanently damaged by the accident.

Mr. SOUTHAM showed two specimens of Charcot's Disease of the Ankle-joint removed by amputation below the knee from male patients, aged respectively 44 and 49 years, the subjects of locomotor ataxy. In both cases extensive erosion of the articular surfaces had taken place in consequence of which the foot had become dislocated upwards and outwards and in one instance the internal malleolus had projected through the skin.

Dr. F. C. MOORE described the morbid features of two uncommon forms of Hepatic Tuberculosis and exhibited the specimens. The first, an example of the so-called "large solitary tubercle," was found in a male, aged 43 years, in association with a similar lesion in the spleen, tuberculosis of the aortic lymphatic glands, and a typical carcinomatous stenosis of the pylorus. The other organs were healthy. The second, an example of tuberculous hepatitis, was met with in a rabbit which had been inoculated 12 months previously with a few highly virulent tubercle bacilli. The interstitial changes consisted in an increased formation of fibro-cellular tissue, monolobular in distribution, which showed no tendency to tubercle formation. Psorosperms were absent. The lungs were the seat of extensive tuberculosis.

Dr. MARSDEN showed a preparation from a case of Ulceration of the Cæcum.

The following card specimens were exhibited:—

Dr. T. A. HELME: Gynæcological Specimens.

Mr. HITCHON: Chronic Gastric Ulcer.

Dr. LEA: A series of Uteri removed by Vaginal Extirpation.

Dr. MOORE: Psammoma

Mr. SOUTHAM: Tuberculous Mesenteric Gland sloughing into the Intestine.

Dr. WALLS Fœtus Papyraceus

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—Treatment of Ozæna.—Moveable Kidney.

THE fifth ordinary meeting of this society was held on Feb. 1st, Sir JOHN BATTY TUKE, President, being in the chair.

Dr. ROBERT FLEMING showed a family consisting of the mother and four children all apparently suffering from Addison's Disease. With reference to the mother it was stated that after each successive pregnancy her skin became darker, but this disappeared to a great extent until after her last pregnancy which occurred two years ago. Since then she had complained of ill-health; her skin was dark in colour and this darkening was noticed to be more marked in summer than in winter. There were no dark markings on the buccal mucous membrane, but many black spots (moles) had appeared recently on the skin of the face, arms, and body. She suffered from vomiting and diarrhœa, faintness, and extreme languor. The four children also presented the same combination of symptoms. The eldest, a girl, aged seven years, who began to become pigmented four years ago, was fair at birth but was now dark and had a large number of moles. The next child was also a girl, aged four years, and presented exactly the same appearances, as did also a boy, aged three years. The youngest, aged two years, had been noticed to be darker and several moles had recently appeared. The cases had not been treated with suprarenal extract, but were apparently benefited by taking arsenic and other remedies.

Dr. WILLIAM RUSSELL and Mr. COTTERILL showed a boy after operation for Mastoid Abscess and Empyema. The lad was seen in consultation on Nov. 27th, 28th, and 29th, 1898, but had been ill for more than a week previously. He had severe rigors for two days and on examination pleural friction on the left side was evident. On the 28th the friction had disappeared and there was no effusion, but rigors continued, and it was not until the 29th that he complained of pain in the left ear and there was swelling and tenderness over the mastoid and it became evident that the rigors were due to mastoid disease. Four days later he was admitted to the infirmary under the care of Mr. Cotterill. The point of interest was that the rigors continued without any ear symptoms showing themselves for several days. The pulse was never above 80 and this slowing was probably due to compression of the brain, as after the operation and the evacuation of intradural pus the pulse regained its normal frequency. Some days after the ear operation pus was evacuated from the right pleura. Mr. Cotterill remarked that there were many signs of phlebitis of the lateral sinus, as swelling and tenderness low down in the neck. These signs were absent in this case. On operation the mastoid antrum was found to be comparatively healthy, there being only a little inspissated pus present. The abscess extended backwards towards the cerebellum and downwards through the jugular foramen.

Dr. SHENNAN showed microscopic preparations of (*a*) the Vessels from a case of Tuberculous Meningitis; (*b*) Section through the Glans Penis with early Tubercle (giant cells) under the Urethral Mucous Membrane; (*c*) ordinary long form of the Diphtheritic Bacillus; and (*d*) Organism from Cancrum Oris. This was separated 24 hours post mortem. It somewhat resembled the diphtheria bacillus and Kanthack said that it was allied to it or was a debased form. It appeared like an involuted form of Löffler's bacillus with clubbed ends. A pure cultivation of the diphtheritic bacillus was obtained from the same case during operation. From a case of acute spreading gangrene a similar culture to the present was obtained.

Dr. ROBERT FLEMING exhibited two Mammillated Stomachs. One was obtained from the body of a woman, aged 54 years, who died apparently from excessive vomiting. There were curious little projections over the whole of the mucous surface. The second was from a case of chronic gastric catarrh due to heart disease. Another specimen showed a chronic gastric ulcer which was adherent to, and had penetrated into, the liver. Dr. Fleming also showed a Heart with Aneurysm of one of the Sinuses of Valsalva.

Dr. WILLIAM STEWART and Dr. JOHN THOMSON exhibited a specimen of Congenital Malformation of the Œsophagus. The child seemed able at first to swallow small quantities of

milk-and-water. Later all was returned. On passing a bougie down the gullet it stuck at a point about three inches. Gastrostomy was performed but the infant died. The specimen showed that the upper end of the œsophagus ended blindly in a test-tube-like manner about an inch from its commencement, while the upper end of the lower portion opened directly into the trachea.

Mr. COTTERILL showed part of the Large Intestine, showing the Line of Suture (almost invisible) after Enterectomy performed 11 years previously for a gangrenous umbilical hernia; 22 inches of the bowel were removed at that time.

Dr. PETER MCBRIDE read a paper on the Treatment of Ozæna, with Special Reference to Cupric Electrolysis. He drew attention to the characteristic atrophy of the nasal mucous membrane in such cases, the change of the ciliated epithelium into the flat form, and to the drying and extreme fœtor of the secretion. As a rule no ulceration could be detected; the atrophy chiefly affected the inferior turbinated bone. Numerous organisms were present in the nose and a modified form of Löffler's bacillus was found. The disease usually began about puberty and was considered as an almost incurable malady. The therapeutic principles which had been in use were chiefly (1) the destruction of the secreting membrane, as by curetting, &c. 2. The application of stimulating and irritating remedies; palliatives had perhaps been most efficacious. The electro-cautery had been used as well as "vibratory massage," carried out by means of a probe armed with wool which when introduced into the affected parts of the nares was rapidly made to vibrate either by the hand or by an electric motor. This latter treatment had, however, in some cases produced hypertrophy of the mucous lining. 3. Widening of the nasal chambers by means of obturators, &c., in order to favour expulsion. Sprays of ichthyol and glycerine or other antiseptics were satisfactory. The injection of diphtheritic antitoxin had been employed because of the presence of the organism which resembled Löffler's. One observer stated that by this treatment he had cured 16 cases out of 32. Dr. McBride then described the mode of treatment by cupric electrolysis and related a number of cases treated thus by himself. Of eight unselected cases (two males and six females) four were practically cured. At least, they remained so for long periods—18 months. The others had been treated at so recent a period that it was impossible to say whether they were permanently cured. The current used varied from three to 10 milliampères. Cocaine was used as an anæsthetic. The copper needle was attached to the positive pole and was inserted into the inferior or middle turbinated bone, while the platinum or steel needle was inserted into the septum. There was little or no pain either at the time or subsequently. The beneficial effects might be as largely due to the copper salts produced as to the electricity. If the cases relapsed the treatment required to be repeated perhaps twice yearly, but at any rate it seemed to be a valuable therapeutic remedy for a most obstinate disease.—Dr. LOGAN TURNER remarked that the interest in the treatment lay in the possible *rationale*. Even after cupric electrolysis the same organisms were found in the nose as before; the treatment was therefore not bactericidal and the good effects were seen in both nostrils though the application was made to one alone. It must rather be a trophic action and the serum treatment might act in a similar manner by causing a general stimulation and a consequent throwing off of the crusts.—Dr. GEORGE HUNTER drew attention to the good effects produced by applying blistering fluid to the atrophic areas.—After some remarks by Dr. SHENNAN Dr. MCBRIDE replied.

Dr. DAVID WALLACE read a paper on Moveable Kidney. After briefly sketching the history of this affection as recorded by various writers he noted that it occurred more frequently in females than in males and that the right kidney was more often free than the left. Formerly it was said to be a commoner affection amongst the poor than amongst the rich. This assertion was controverted by Greig Smith who stated that tennis, riding, &c., were as frequent causes amongst the well-to-do as over-frequent pregnancies and curtailment of rest amongst the poor. The experience of Dr. Wallace went to prove that statement. He thought that a loss of fat predisposed to the condition. On the other hand, however, it might only render the moveable kidney more easy of palpation. Was emaciation really the cause or the effect? He referred to the recent anatomical descriptions of the kidney surfaces and pointed out how a variation in its normal anatomical relationship was the probable cause of the condition. Dr. Wallace thought that the ordinary degree of mobility of the kidney was its safeguard and that when it was too tightly fixed then there was a greater likelihood of its becoming free. As a rule detection of the condition was not difficult. The moveable kidney was thought to be larger than normal merely from its free movement under the fingers. The usual symptoms of this affection were—(1) mobility of the organ itself; (2) pain of a dragging or aching character; (3) renal pain was distinctive; there might be hæmaturia or intermittent hydro nephrosis; and (4) gastro-intestinal derangements which might end in neurasthenia. These gastric symptoms were due probably to a dragging down of the duodenum. The moveable kidney was usually quite normal, though in some cases it was the seat of a calculus. The symptoms usually entirely disappeared on fixing the organ in its normal position. Intermittent hydro-nephrosis was an infrequent symptom. If the tumour be present it might hide the condition as the kidney might appear to be fixed. As regards treatment there were three classes of cases. 1. Those where no treatment was necessary. In such cases nothing should be said to the patient regarding the condition which was usually made out while examining for some other disease. 2. Those benefited by wearing a pad. 3. Those where operation was necessitated. Of 14 cases treated by Dr. Wallace one occurred in a male as a result of a fall from a horse and was treated by operation, while 13 were in females. Two cases were of the gastro-intestinal type and were successfully treated by the wearing of a distensible air-pad which was fixed over the region of the kidney to the inner side of the corset. Such a pad was much more useful than the solid forms fixed to belts. The method of operation carried out in several of the others was that of separating the perirenal fat and cutting it off, then three or more deep catgut sutures were introduced through the cortex, and the kidney was fixed as high up as possible to the abdominal wall.—Mr. COTTERILL remarked that his worst cases had occurred in multiparæ and that the amount of displacement bore no relation to the severity of the symptoms. He described the method by which he fixed the kidney, transfixing the posterior abdominal wall and bringing both ends of the silkworm ligature to the skin surface and tying them together.—Dr. WILLIAM RUSSELL remarked that many of the women inmates of Queensberry House had moveable kidney. In making post-mortem examinations he found the kidney freely moveable under the peritoneum as far as the spine or brim of the pelvis. He could not see that the moveable kidney had any connexion with the duodenum so as to produce symptoms of stricture and related the case of a woman who suffered from prolapse of all her abdominal organs, the pylorus being at the level of the umbilicus, and yet there was no effect produced on it by the freely moveable kidney.—After other remarks by Dr. STILES, Dr. LUNDIE, and Dr. CHURCH, Dr. WALLACE replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Juvenile Muscular Atrophy.—Beri-beri.

A MEETING of this section was held on Jan. 27th, Dr. J. W. MOORE, the President, being in the chair

Mr. LANGFORD SYMES exhibited a case of Erb's Juvenile Muscular Atrophy. The patient was a boy, aged eight and a half years. He had been ailing since he was two years old when he was learning to walk. If he fell he could not get up alone. He was now becoming more helpless, could not walk up stairs, and was unable to get in or out of bed.

Mr. CONOLLY NORMAN read a paper on the Clinical Features of Beri-beri, analysing the symptoms in some detail. Heart troubles were the most serious. An invariable condition was tachycardia with extreme irritability of the pulse. Unconformability of the heart and pulse was frequent and striking. Variable murmurs most commonly heard in the pulmonary area were not infrequent, also reduplication of the first or second sound. The heart was frequently dilated and this dilation (chiefly affecting the right side) often came on with singular rapidity. Death from heart involvement was common, sometimes occurring quite suddenly and in apparent convalescence, sometimes after a prolonged agony. The sensory symptoms, always

occurring primarily in the lower extremities, and sometimes confined to the legs, consisted of various degrees of superficial anæsthesia and hypæsthesia combined usually with paræsthesia and hyperæsthesia (painful anæsthesia). Deep (muscular) tenderness and tenderness of the nerve trunks coexisted with loss, diminution, or alteration of superficial sensation. Spontaneous pain (aching and cramps in the muscles, painful formication in the skin) was common. Œdema, in Mr. Norman's opinion, was probably always present, though sometimes very slight and transitory. It varied in character, being usually less marked than in ordinary anasarca, say from Bright's disease, and sometimes approaching closely to the "solid œdema" of the myxœdematous state. It might be slight, fugacious, and confined to the pretibial region, or it might spread all over the body. Cases which were highly œdematous constituted the so-called "wet form" of beriberi. Effusions into the joints were rare, but common in the serous cavities, especially in the pleura and pericardium. In the latter situation they often accelerated death which might be also brought about or hastened by œdema of the lungs. The motor symptom was paralysis of various muscles or groups of muscles. The muscles first attacked were usually those supplied by the peroneal nerve. The gait in well-marked cases was characteristically neuritic. The greater engagement and less resistance of the extensors gave the shifting equilibrium in standing, the dropped and inverted foot, the high action in walking (*démarche du stepper*). The paralysis rarely involved the upper extremities. The muscles of respiration not rarely suffered, particularly the diaphragm, a fact which constituted one of the dangers of the disease. Beri-beri appeared to be spreading. Since 1894, when, as his audience were aware, it first appeared in the Richmond Lunatic Asylum in Dublin, epidemics had been reported from two asylums in the United States, a few cases strongly recalling beri-beri had been reported from German asylums, and an epidemic had occurred in the autumn of 1897 in an asylum in the South of France which attacked 150 patients of whom about 40 died.—Dr. SMITH, Dr. LITTLEDALE, Surgeon-General POTTER, and others having discussed the paper, Mr. NORMAN, in reply, said that Manson's opinion that the poison of the disease lurked about the soil of buildings seemed to be supported by appearances. He could not explain why beri-beri should occur chiefly in asylums in this country and amongst the epileptics in these institutions.

SECTION OF PATHOLOGY.

Agglutinability of the Typhoid Bacillus.—Exhibition of Specimens.

A MEETING of this section was held on Jan. 13th, Dr. J. M. PURSER, the President, being in the chair.

Dr. E. J. MCWEENEY read a note on the Agglutinability of Different Races of the Typhoid Bacillus. He described how he had been obliged to suspend temporarily the serodiagnostic work at the Mater Misericordiæ Hospital owing to the peculiar behaviour of a strain of typhoid fever bacilli, called for brevity's sake T.A., which he had isolated by the usual methods from the bile of a fatal case of typhoid fever. Death had occurred in this case from cardiac failure nine days after defervescence and at the necropsy the ulcers in the small intestine were healed but there were many open follicular ulcers in the colon. The bacillus T.A. was present in the bile in great numbers and pure culture. It presented the cultural characters of genuine Eberth's bacillus. Distinctive peculiarities were the extreme slowness of its growth on gelatin plates, the fewness, delicacy, and shortness of the flagella, and the fact that although the mobility was extremely active during the first 12 hours of culture it had died down by the end of 24 hours to a waggling movement hardly distinguishable from that of bacillus coli. Tested against the serum of several typical cases of typhoid side by side with a typical race obtained from Professor Lorrain Smith of Belfast it proved markedly resistant against agglutinating influences. The dilutions generally practised were 10 per cent., 1 per cent., 0·2 per cent, and 0·1 per cent. Sera of cases in the third week, which clumped the Belfast bacillus instantaneously in 10 per cent. dilution, and left the field quite clear of isolated organisms, took an appreciable time to clump T.A., and after the lapse of half an hour the field was quite free from scattered bacilli. In the one in 100 dilution, where the Belfast bacillus was well clumped at the end of the observation period (from two to five hours), T.A. was so imperfectly agglutinated that diagnostic inferences could not be drawn—in fact, with the higher dilutions these two races of undoubted typhoid bacilli gave directly opposite serodiagnostic results. The speaker went on to discuss the significance of the expression "agglutinable" in the light of the recent work published by Kraus and Nicolle, proving that the phenomenon was the result of the interaction of two substances, one contained in the serum, the other in (and subsequently outside of) the bacterial bodies, which played a purely passive rôle; he pointed out that the serum need not necessarily be immune, nor was the phenomenon essentially specific; and finally, the interesting work of Bordet was described as showing how, quite apart from bacterial action, the serum of the rabbit agglutinated guinea-pig's serum containing red corpuscles, causing these latter to form "clumps," and how, if the serum of the guinea-pig which exercises but a slight agglutinative action on the corpuscles in rabbit serum be taken from a guinea-pig which had previously had rabbit's blood injected a few times, the agglutinative action of the guinea-pig serum was greatly increased.

Dr. KNOTT exhibited 19 Femora and 19 Tibiæ presenting various anatomical, anthropological, and pathological peculiarities; three of the femora were affected with coxa vara.

Mr. CONOLLY NORMAN exhibited a specimen of Peritoneal Tumour which occurred about the junction of the jejunum and ileum and appeared to spring from the peritoneum covering the anterior wall of the intestine; it was of oval shape, of about the size of a goose's egg, and in colour and consistence, both externally and on section, strongly resembling a uterine fibroid. The growth had penetrated the intestine, an irregular ulcerated surface, not fungating, and of about the size of a sixpence, showing in the gut. The patient died from repeated hæmorrhages from this point. No other new growths were discovered and the uterus and ovaries appeared to be perfectly normal. In Mr. Norman's opinion the tumour was a sarcoma.—Dr. E. J. MCWEENEY and Dr. A. R. PARSONS were inclined to think that it was a myoma.

Dr. COLEMAN exhibited: (1) A Glioma of the Cerebral Hemisphere; (2) a Tuberculous Tumour of the Cerebellum; and (3) an Abscess of the Cerebellum.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 3rd in the society's rooms at the West London Hospital, Dr. S. D. Clippingdale, President, being in the chair.—A discussion on the Treatment of Appendicitis was introduced by Dr. Seymour Taylor and Mr. McAdam Eccles and was carried on by Dr. Donald Hood, Mr. Keetley, Mr. Bidwell, Dr. Cayley, Mr. E. T. A. Boyton, Dr. George Eccles, Mr. Lunn, and Dr. Dobson.—Dr. Seymour Taylor considered that the physician's advice was of great weight in two periods of the disease—(1) the preventive period when by so ordering the patient's diet and mode of life an attack of appendicitis might be postponed or even prevented; and (2) when a local tumour having formed the progress of the disease might be arrested at a point short of the formation of pus. Suppuration having occurred, treatment must be entirely at the hands of the surgeon. In the first stage the diet should be largely of a liquid character but should also consist of vegetables and some beef extract. Milk should be rigidly excluded, as it tended to constipation with bulky or scybalous stools. In the second stage his experience was strongly in favour of treatment by perfect rest, small doses of opium frequently repeated, and the administration of copious enemata of soap-water and olive oil.—In reviewing the surgical treatment of acute inflammation of the vermiform appendix Mr. McAdam Eccles said that he considered that surgical interference was called for in all cases where there was suppuration, whether local or remote, in instances where there was general septic peritonitis, and in many cases between attacks, so that the offending organ might be removed. When an abscess in the right iliac fossa had to be dealt with he thought that two points needed emphasis: one that a very free exit for the pus should be secured and the other that nothing more than free drainage, as a rule, should be attempted. His belief was that most patients thus treated did well and had but little tendency to be again troubled with the appendix. He laid stress on the fact that he thought that it was not advisable to explore the area of suppuration until time had elapsed so that peritoneal

adhesions, shutting off the general cavity of the peritoneum, might have formed. The pus did not usually tend to pass into the serous cavity and therefore too early operation was a mistake.

THE MEDICAL GUILD, MANCHESTER.—The annual meeting of the Medical Guild was held in the Victoria Hotel, Manchester, on Jan. 25th, the President, Alderman Walmsley, J.P., M.R.C.S. Eng., being in the chair.—The annual report of the council stated that continued progress had been made during the year and recounted various subjects of professional interest which had been dealt with, including hospital reform, club practice, provident dispensaries, the Midwives Bill and the Vaccination Bill, and the establishment of a quarterly journal for the promotion of the objects of the Guild. 46 members had joined, 15 had resigned (10 being due to removals to other districts), while three had died during the past year. Laudatory reference was made to the Wigan Guild of which practically every practitioner in the district was a member. The treasurer's statement showed a balance in hand of over £16. The annual report and statement of accounts were received and adopted on the motion of the chairman, seconded by Professor Dixon Mann and supported by Dr. Wahltuch and others. The following office-bearers were elected:—President: Alderman F. H. Walmsley. Honorary Vice-Presidents: Dr. Henry Ashby, Dr. C. H. Braddon, J.P., Dr. Samuel Buckley, Mr. William Crosby, Dr. J. Dreschfeld, Dr. A. M. Edge, Dr. C. E. Glascott, Dr. Alfred Godson, Dr. James Hardie, Mr. Francis Hepworth, J.P., Mr. Thomas Jones, Dr. David Little, Dr. T. N. Orchard, Dr. D. Lloyd Roberts, F.R.S. Edin., Dr. Henry Simpson, Mr. F. A. Southam, Dr. Graham Steell, Mr. Walter Whitehead, F.R.S. Edin., Dr. S. Woodcock, J.P., Mr. G. A. Wright, and Mr. A. H. Young. Council: Chairman: Professor J. Dixon Mann. Vice-chairman: Mr. R. H. Wolstenholme. Honorary treasurer: Dr. C. G. L. Skinner. Honorary secretary: Dr. Alexander Stewart. Ordinary members of Council: Mr. Samuel Bagley, Dr. W. Bruce Bell, Dr. Isaac Blore, Mr. William G. Booth, Dr. Robert Forsyth, Dr. Alexander Fraser, Mr. C. R. O. Garrard, Dr. John H. Godson, Dr. N. C. Haring, Dr. Arnold W. W. Lea, Dr. J. W. Grange, Dr. Herbert Lund, Dr. J. Ratcliff-Gaylard, Mr. F. Leyland Roe, Mr. Alic Phillips, Dr. A. Brown Ritchie, Dr. J. Prince Stallard, Mr. G. A. Wright, Mr. A. I. Richards, and Dr. F. H. Worswick. Auditors: Mr. J. W. Wood and Dr. J. C. Nichol.

FOLKESTONE MEDICAL SOCIETY.—A clinical evening was held on Feb. 1st at the Victoria Hospital, the President, Dr. Tyson, being in the chair. Thirteen members were present.—A letter was read from Mr. E. D. Fitz-gerald thanking the society for its vote of condolence on the death of the late President, Dr. C. E. Fitz-gerald.—The President showed cases of Myeloid Sarcoma of the Superior Maxilla removed six months ago with no recurrence; Carcinoma of the Mamma operated on with subsequent Atrophy of an Enlarged Thyroid; Tabes Mesenterica with Pyloric Obstruction by Glands; Encysted Hydrocele of the Cord and Tuberculous Tarsus and Ranula.—Dr. P. Lewis showed a girl, aged 16 years, who had had the Left Breast removed for Hypertrophy; also photographs of an Apparatus designed to Educate Patients to Breathe through the Nose after Operation for Adenoids; also photographs of Graves's Disease with Unilateral Exophthalmos and no Thyroid Enlargement but in which Tachycardia and Graefe's Sign were present; a case of Myxœdema before and after treatment; a specimen of Calcified Fibroid; samples of Sterilised Milk; a new form of Aspirating Syringe; also Skiagrams.—Dr. Cecil Latter showed a case of Congenital Heart Disease and also specimens of Carcinoma of the Stomach.—Mr. Barrett showed a patient with Advanced Epithelioma of the Lip, also a photograph of another similar case.—Dr. Eastes, Dr. Larking, and Mr. Linington showed Microscopical Specimens.

NEUROLOGICAL SOCIETY OF LONDON.—The annual meeting of this society was held on Feb. 2nd, when the newly-elected President, Dr. W. H. Gaskell, F.R.S., delivered an address on the Meaning of the Cranial Nerves, in which he gave an account of his researches into the morphology of the cranial nerves, especially in the scorpions and the ammonocœtes. There was a very large attendance of members and at the close a hearty vote of thanks was proposed by Professor Schäfer, seconded by Dr. Ferrier, and carried by acclamation. During the evening the ballot for the officers for 1899 was taken and the following were elected:—President: Dr. W. H. Gaskell, F.R.S. Vice-Presidents: Dr. Julius Dreschfeld and Dr. Augustus Waller, F.R.S. Council: Mr. C. A. Ballance, Mr. R. Marcus Gunn, Mr. Victor Horsley, F.R.S., Mr. J. N. Langley, F.R.S., Dr. C. Mercier, Dr. F. W. Mott, F.R.S., Dr. G. Vivian Poore, Sir Felix Semon, Dr. H. H. Tooth, and Dr. W. Hale White. Treasurer: Dr. Charles E. Beevor. Editor (*ex-officio*): Dr. A. De Watteville. Secretaries: Dr. J. S. Risien Russell and Dr. W. S. Colman. Sir Samuel Wilks who was an original member of the society and was its second President was unanimously elected an honorary member. The next meeting of the society will be a clinical one and members intending to show cases are requested to communicate with one of the honorary secretaries as soon as possible.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Feb. 3rd, the President, Mr. D. H. Goodsall, being in the chair.—Dr. Arthur Davies showed a woman, aged 46 years, who was the subject of Myxœdema. The patient, who had been shown before the society previously to commencing the thyroid treatment, had now lost 6·5 kilogrammes in weight and had gained in brightness and well-being since taking thyroid 0·3 gramme daily for two months. Dr. Davies also exhibited a woman, aged 61 years, a subject of Myxœdema for 16 years, with the characters usually present.—The President showed a much-thickened and chronically inflamed Bladder of only 90 cubic centimetres capacity. The ureters were dilated and there was pus in the renal pelves resulting from a very tight urethral stricture in a man, aged 58 years.—Dr. B. G. Morison related a case of Abortion in a Multipara, aged 53 years, with Retention of the Decidua which was digitally removed. At its completion there was collapse with a pulse of from 120 to 130 per minute, not the result of profuse hæmorrhage. Two hours later the patient again became collapsed when a saline enema of about one litre was slowly given. The pulse improved quickly after commencing the enema and in two hours she had fairly recovered. She did well subsequently.

Reviews and Notices of Books.

Cerebral and Mental Symptoms in relation to Somatic Disease, Anæsthetics and Toxic Agents, Traumata and Surgical Procedures. By JAMES CHRISTIAN SIMPSON, M.B., C.M., M.D. Edin. London: John Bale, Sons, and Danielsson. Pp. 192. 1898. Price 5*s*.

THE subject matter of this book was presented as a thesis for the degree of M.D. of the University of Edinburgh in 1895. Dr. Simpson has done well in publishing it in book form. So much interesting matter is contained in its pages that it would have been a great loss if a greater means of publicity had not been secured for it than would have been possible if the thesis had met with the ordinary fate of such literary productions.

The book is divided into five parts. The first deals with the Cerebral and Mental Symptoms in relation to Somatic Diseases. The subjects brought under discussion offer a pleasant change from the ordinary text-books. Each system of the body is dealt with separately. Thus we have a discussion of the mental symptoms associated with disorders of the alimentary system, next of the circulatory system, then of the hæmopoietic system, and so on. Under the last named we find the mental symptoms noted in Graves's disease, myxœdema, cretinism, &c. Some interesting cases are detailed under the various divisions.

Part II. deals with Toxic Insanity. After a general discussion of the clinical groups into which this condition may be divided the author draws attention to one notable symptom—viz., aphasia—which may be produced by a variety of toxic agents, especially the vegetable drugs belonging to the natural order atropaceæ. Attention is also directed to the toxic insanity which occasionally follows the inhalation of one or other anæsthetic agent when

administered for therapeutic reasons. The effects of such drugs as opium, Indian hemp, sulphonal, cocaine, phosphorus, &c., also receive due notice. The sub-section of toxic insanity due to auto-intoxication is also well worthy of perusal. The importance of this form of poisoning has only recently been recognised in this relation, although, of course, the fact of reabsorption of toxic agents from the alimentary canal in particular has long been well known. Gastro-intestinal disturbance occupies a prominent place in this section and the importance of lavage of the stomach and aperients in cases of acute melancholia is insisted on.

In Part III. we find a description of Traumatic Insanity and the cases are divided into those in which there is actual cranial or cerebral lesion and those of a more general nature without actual gross cranial or cerebral injury. Dr. Simpson has evidently made a careful study of the literature of the subject and the various views of authorities such as Mickle, Lamartine, and many others are quoted and discussed.

Part IV. will be especially interesting to surgeons as it deals with the Surgical Relief of Cerebral and Mental Symptoms. The classification is similar to that adopted in Part I. The various systems of the body have been considered in turn, but some preliminary remarks are made on (1) the effect of an operation in an insane patient; (2) whether it is justifiable to operate on insane patients for diseases other than fatal ones; and (3) whether it is justifiable always to operate on an apparently sane patient with a bad hereditary history or an acquired neurosis in cases other than those of fatal disease. These questions open up large fields for differences of opinion and the author's criticism of the various views which have been put forward is marked with firmness and shows a full grasp of the subject. In this division also we find a consideration of the condition of microcephaly and its treatment.

In Part V. an account is given of those cases of Insanity or Mental Disorder which are apparently directly caused by Surgical Operations

Taking the book as a whole we can cordially congratulate the author on his work which shows every evidence of a thorough and practical knowledge of the subject and we can recommend its perusal to our readers.

A Text-Book of Practical Therapeutics. By H. AMORY HARE, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Seventh edition. Illustrated. London: Henry Kimpton. 1899. Pp. 731. Price 21*s.*

No greater evidence of a book proving successful could be found than the fact that a sixth edition—a large one—was exhausted in nine months. This has happened with the work now under consideration. Only a few months ago a review of the sixth edition appeared in our columns in which we described the general scope of the book and expressed the high opinion which we had formed of it. But few further words from us are therefore required.

The present edition has been enlarged, thoroughly revised, and brought up to date, and the text has been conformed to the British Pharmacopœia of June, 1898. It is consequently equally as useful to the English practitioner as to the American. One of the greatest advantages of the book is the ease with which any doubtful point can be referred to, thanks not only to a copious index but also to the manner in which each section is arranged. A number of illustrations designed to elucidate descriptions of technique or therapeutic results have been inserted. These are well executed and certainly add to the value of the work. We may repeat the words of our last notice: "We can thoroughly recommend this book to practitioners and students."

General Nursing. By EVA C. E. LUCKES, Matron to the London Hospital. London: Kegan Paul, Trench, Trübner and Co. 1898. Pp. 351. Price 5*s.*

WE are told in the preface of this excellent manual that the bulk of the contents of this volume was first published in 1884, and that only slight alterations were made in subsequent editions. The instructions in nursing had hitherto appeared in the form of lectures, but the present volume has been entirely re-written and taken out of the lecture form. The result is one of the best books for nurses on their duties that we have yet met with. Written in admirable style, it gives directions which if all nurses would follow would greatly add to the well-being and comfort of the patients whom they are called upon to tend. Much useful advice is given and each page contains some valuable hint or fact. For instance, on the second page is a sentence which too often the nurse is apt to forget, thereby through pride or over-confidence in herself being frequently brought into unpleasant relationship with the medical man in attendance: "Trained nurses must scrupulously avoid anything which approaches to amateur doctoring, not only for their own sake but for the sake of the whole nursing profession. It prejudices all who come in contact with it against the education of nurses and is held in as much contempt by all really accomplished nurses as any other sort of quackery is by duly qualified practitioners." The arrangement of the book leaves little to be desired. By means of headings in black type at the borders of the letter-press reference to any particular point is greatly accelerated. The manual is most complete and any nurse will find it a very valuable addition to her nursing outfit.

LIBRARY TABLE.

Harry Ingleby, Surgeon. By FREDERIC J. WEBB. London: T. Fisher Unwin. 1899. Price 6*s.*—Mr. Webb gives no indication as to whether he is a medical man or not, but from the internal evidence of his vividly written book we think he must be. We should imagine him to be a young worker in the field of fiction, for the plot of his book—if, indeed, it can be said to have a plot—is crude and even common-place. The trials of a pair of young lovers, the dark, handsome and of course wicked man who intervenes, the seduced dressmaker, and the illegitimate baby are all well-known material and have been used *ad nauseam*. But let us turn from these pieces of padding to Mr. Webb's life-like scenes of general practice in a north country town and in the East-end of London. Here he is thoroughly at home and writes as one who has undergone the trials, worries, and, be it said, the amusement of a practice among the poor. Who of us has not seen this sort of thing? "How the people clustered, too, in the house of the dying, leaving the sufferer no air. The slatternly woman, often drink-stained, seemed to have nothing else to do but hover round saying in subdued tones 'God's good.' ..... On one occasion he held the door open to let thirteen out of one small room. As most had different remedies to propose no wonder the baby died. How essential was a beautiful funeral." Dr. O'Gorman's Irish patients, too, are delightful—the Southern Irish, we mean, that strange, lovable, illogical, contradictory people which combines, as perhaps none other does, the heroism of manhood with absolute childishness. Introductory addresses are still given at most of the hospitals and Mr. Webb produces an admirable specimen. The speaker, Dr. Campbell, does not make out, as is too often the custom, that the medical profession is a bed of roses. Not so; he says: "Your failures will be many, your disappointments heartrending ..... you must not look for rewards or riches or gratitude. ..... Reverence the dead, compassionate the living, be courteous to the poor." Mr. Webb has

given us a series of life-like pictures of medical men and medical practice and we commend his book to all who are interested in either subject.

The Secret of Good Health and Long Life. By HAYDN BROWN, L.R.C.P., L.R.C.S. Edin. London: James Bowden. 1898. Second Edition.—This is a little book of some 150 pages but it contains a good deal of sound common-sense. The points to which the writer draws attention are just those which are most commonly neglected. Thus in the chapter on food he says: "Vegetarianism is a boon and a blessing to men because it helps to indicate to us the happy medium; it encourages a certain quantity of vegetables being consumed with other food that might not be taken otherwise." So, too, his remarks on beer are eminently sensible. Reason must have her say, he tells us, and because one man can drink a quantity of beer it does not follow that everyone can, neither because a person can keep well without alcoholic drinks does it follow that nobody else requires them. We can cordially recommend this unpretending little volume and if on the whole the advice given may seem to be a counsel of perfection there is all the more reason for trying to attain to such.

Manual of First Aid. By J. A. AUSTIN, M.D. Aberd. London: Sampson Low, Marston, and Co. 1898.—There is rather a plethora of manuals upon first aid. Fortunately they all say more or less the same thing—that is, as regards broad principles—otherwise the student of first aid might get bewildered with the multitude of counsellors. Dr. Austin's little book is well and interestingly written. In his opening chapters especially he gives various striking instances of the value of first aid given in the right and in the wrong way. The plan of the book follows the syllabus of the St. John Ambulance Association and is copiously illustrated with diagrammatic figures which are plain and simple and also accurate, except, we should say, Fig. 29, showing compression of the brachial artery. As given in the figure the fingers are simply lifting up the biceps. The description of how to compress the artery given in the text is, however, plain enough. Altogether the book is a good specimen of its class.

JOURNALS.

Blackwood's Magazine appears as a double number in honour of reaching its thousandth issue, an event which has been announced as unparalleled in periodical literature. A claim has since been put in for the *Gentleman's Magazine* as showing a longer continuous life. In this number of *Blackwood* the "*Noctes Ambrosianæ*" are revived and the third—or is it the fourth?—generation of *Maga's* contributors are well represented in its pages. Among the contents are stories by Mr. Joseph Conrad and Mr. Maurice Hewlett, the winners of the Academy's £50 prizes for the best books of last year.

Charing-cross Hospital and Medical School have decided not to be behind other large centres of medical education in the matter of being represented by an official organ. No. 1, vol. 1 (January, 1899), of the *Charing Cross Hospital Gazette* has just been issued and its 12 pages contain matter that is well selected and edited. The "School Notes" are merrily done. We bid our youthful contemporary welcome.

New Inventions.

NEW SELF-RETAINING DRAINAGE TUBING.

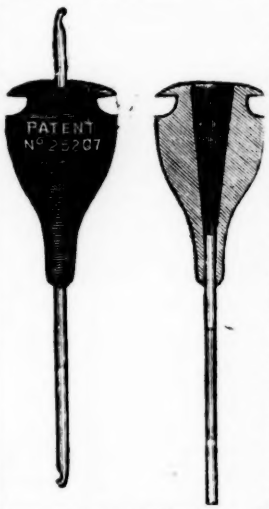
I DESIRE to bring to the notice of the profession a new form of drainage tubing, practically self-retaining, which I have found to answer admirably. It consists of ordinary drainage tubing of various sizes, perforated along its entire length at intervals of about three-quarters of an inch and between each perforation on either side of the tubes are studs or wings which, being of the same elastic material as the tube and cast together in one mould, offer but slight resistance during the process of introduction. As the drained

tissues close around the tube these studs offer points of resistance which effectually prevent its slipping out. My suggestion has been very well carried out by Messrs. Arnold and Sons of West Smithfield.

T. CARTER WIGG, M.D. Brux., M.R.C.S. Eng.
Oxford-terrace, Hyde-park, W.

VACCINE EXPELLER.

WE have received from Mr. J. H. Montague of 101, New Bond-street, W., an appliance which promises to be very useful to vaccinators. It is intended for the expulsion of lymph from capillary tubes without resorting to the time-honoured method of blowing it out with the breath and is made wholly of soft, red indiarubber without any attachments of glass or metal. The illustrations show it full size, both entire and in section. The tube of lymph with ends still sealed is first drawn midway through the larger opening as represented; the upper end is then broken off and the tube is drawn still further through until only about half an inch of it remains within the expeller. The other end of the tube containing the lymph is now broken off, and the expeller being held between the first and second fingers the lymph is instantly forced out by placing the thumb over the upper opening and compressing the indiarubber. The lymph may also in like manner be distributed as desired. If the tube does not pass with ease through the small end of the opening in the indiarubber it is only necessary to wet it a little.



FIRST REPORT OF THE ROYAL COMMISSIONERS ON THE METROPOLITAN WATER-SUPPLY.

(*Concluded from p. 314.*)

THE sixth section deals with the objects to be gained by connexion of the various systems of supply. The Commissioners point out that intercommunication to be of use must necessarily imply that there will be an amount of water available for transfer through the connexions made. Intercommunication would necessarily be useless in the case of a company which was not in the effective possession of a supply of water larger than it required to meet the maximum daily demand of its own customers. The effective possession of such a supply implies that a company has a statutory right to obtain the water and the necessary machinery and plant for the treatment and pumping of the water. The Commissioners point out that it is the

duty of every company to provide against any contingencies which may arise and they give it as their opinion that each company therefore ought to be in effective possession of a surplus supply. With regard to the possession of a surplus supply the Commissioners state that it should as far as practicable be insured by a proper system of control. Should a general scheme of intercommunication be carried out it should be arranged that in the case of any accident happening, or if as a result of miscalculation on the part of any company as to their resources the result was that they found themselves in want of water, then the defaulting company would be able to obtain the necessary assistance. But after such a proof of incapacity the defaulting company should be made to extend its own works without delay and to remedy defects which had made themselves apparent. By this means the ability on the part of other companies to give temporary assistance would save the population from any interference with the continuity of their water-supply. The Commissioners point out that the engineers of the companies distinguish between major and minor emergencies. A minor emergency might arise from a fracture of the mains, from accidents to the machinery, or from great loss of water due to its use for fire extinction. The characteristics of these minor emergencies are that they are usually strictly localised and of short duration, so that the temporary assistance which would be required could be given by a simple connexion of the mains of one company with those of its next neighbour. The major emergencies arise from failure of the sources of supply in the rivers, storage reservoirs, or wells. An illustration of a major emergency was given in the case of the East London Company during last year. Such a case required the assistance of a large quantity of water for a period extending over many weeks and such an emergency could only be provided against by laying down large mains for the conveyance of water. The Commissioners point out that the schemes of intercommunication submitted to them and the principles on which they were drawn up were sound in the case of companies working as separate organisations, each of which was under statutory obligations, and they added that should the various undertakings be amalgamated or purchased by one authority such intercommunication would be in continuous use.

The seventh section contains observations on the schemes of intercommunication submitted by the associated companies. The Commissioners observe that the schemes submitted to them illustrate the fact that it is practicable to connect the whole of the different systems of supply now administered by the eight metropolitan water companies, that the variations and combinations which might be formed for connecting these systems are almost infinite in number, and that changes must take place as the systems extend. With regard to the Battersea scheme it is pointed out that the filters of the Southwark and Vauxhall Company should "in no case be permanently continued," as the surroundings render the site unsuitable for such a purpose. The Commissioners state that all the schemes submitted to them appear to be feasible and that either would be a good insurance against failures if each company had effective possession of a surplus supply of water to transfer and if the statutory restrictions on intersale of water were abolished or suspended.

The eighth section is devoted to a consideration of the cost of the intercommunication scheme and to the legal powers which it would be necessary to obtain for carrying it into effect. The Commissioners point out that the East London were the only company in default during last summer and that the subject of intercommunication became one of urgency in consequence of that default. They consider that the companies take "a wide and sound view" of their obligations in viewing the intercommunication system as one of joint benefit to all. They commend the resolutions of the companies as set forth at the commencement of the report. In the opinion of the Commissioners the cost of connecting the different systems should be defrayed by money raised by issuing debenture stock from time to time. The Commissioners agree with the suggestion that whilst the works of intercommunication are not used the total amount of debenture stock issued by any of the companies should be treated as a common fund and that the companies should contribute to the payment of interest in proportion to their water rentals. If the works of intercommunication are used the company receiving water should pay an amount in such proportions of the interest on their debenture stock as may be agreed upon by the companies or in case of disagreement by some sum to be fixed by an arbitrator. A company receiving water should also pay at a price to be agreed upon or to be fixed by the companies or should they not agree by the President of the Local Government Board on the application of any one company. The Commissioners report that in their opinion the debenture stock raised might properly be exempt from the obligations of a sinking fund clause. The Commissioners point out that the London County Council had opposed any intercommunication scheme on the ground that it might increase the value of the undertaking, but they give it as their opinion that an arbitrator would not consider that the values were increased by intercommunication and they observe "that no company should be allowed in the event of purchase to enhance the value of its undertaking by means of an intercommunication scheme." The scheme is intended, they point out, to keep up a full supply for which a company receives payment in water rents and to protect water consumers from inconveniences which may be due to an accident or more frequently to default of some company in making due provision to carry out its supply. The Commissioners say that further consideration is required to determine exactly what works it would be best to undertake to ensure efficient intercommunication. It would not, they believe, be expedient to lay down a complete scheme in a Bill and they recommend in preference that elastic clauses should be framed so that the companies may execute from time to time any works which may be authorised by some public department such as the Local Government Board. To guard against possible dilatoriness on the part of any company the Bill should contain a provision to ensure that any works authorised or directed by the Local Government Board should be immediately carried out. The Commissioners are of opinion that in the case of intercommunication being established between the companies it would be better for the work to be carried out altogether by one of them and that therefore it would be well to empower companies to execute works within and outside their statutory limits of supply. The Commissioners give a list of Acts which at present are or may be statutory impediments to an efficient system of intercommunication. These are:

1. The Staines Reservoirs Act, 1896, which prohibits sale of water impounded in those reservoirs.

2. The Southwark and Vauxhall Company's Act, 1898, which prohibits the sale of water abstracted from the Thames under the provisions of that Act.

3. The Thames Conservancy Act, 1894 (Section 295). A somewhat complicated question of law arises out of this Act and on the true solution of the points raised the Commissioners refrain from expressing an opinion.

The Commissioners state that it has also been suggested that the powers of the companies under the Waterworks Clauses Act or under the private Acts which they at present possess are sufficient to authorise them to take up streets and do other works which may be necessary for the purpose of carrying out the scheme.

With regard to the question of further abstraction of water from the Thames the Commissioners report that the suggestion that the Local Government Board should have power in the case of emergency to authorise an additional draught on the Thames is one which would be likely to meet with opposition. They point out that the time at which the Local Government Board would be asked to use its power of dispensing with the statutory obligations of the companies would be at times when the Thames was low and when any further depletion of the river would be objected to. The Commissioners suggest that it would be better to extend to all the companies the principle contained in the Staines Reservoirs Act and to allow them to draw a varying amount of water from day to day provided that the quantity drawn per day on an average of six months does not exceed the authorised amount; they see no good reason why the companies should be bound to a fixed maximum quantity in every 24 hours and they suggest that the reservoirs might be rapidly filled at times when the river is full. In conclusion the Commissioners point out that the recommendations in the report are entirely independent of the matters contained in the other two references which have been submitted to them and that their suggestions in no way prejudice the question of control to be exercised by local or other authorities or the question of purchase of the companies' undertakings by one or more authorities.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 11, 1899.

THOUGH it is somewhat premature to speak of the General Medical Council having drafted a Bill for the amendment of the Medical Acts it is a fact that on one or two points affecting the disciplinary powers of the Council a practical unanimity seems, or rather seemed, to have been reached by that body when in May last it was resolved on the motion of Mr. BRYANT seconded by Dr. MACALISTER:—

That the President be requested to communicate with the Lord President of the Privy Council as to the practicability of obtaining such an amendment of the law as will more effectually prevent the holder of a medical diploma or degree from using the title thereof after his name has been erased from the Medical Register under Section 29 of the Medical Act, 1858, and for so long as the erasure continues in force.

This is the fundamental action of the Council in the matter. It is due to the President to say that he has been diligent in the promotion of the movement in the way of communications with the Privy Council and with the qualifying bodies. At first he did not meet with much encouragement. He received from Sir C. LENNOX PEEL an intimation that the Lord President could not hold out any hope of legislation being undertaken to effect amendment of one provision alone of the Act, even if the degree-giving bodies had expressed a desire for the amendment, which did not appear to be the case. Nothing daunted, the President at the instigation of the Executive Committee undertook further correspondence with the Privy Council and fortified himself with two clauses calculated to facilitate the discussion of the amendment, as to the necessity for which there seemed a practical unanimity in the Council. The clauses were drafted at the President's request by Mr. MUIR MACKENZIE and are as follows. We quote from the minutes of the Executive Committee dated Nov. 26th, 1898.

1. Where a registered medical practitioner has been convicted in England or Ireland of any felony or misdemeanour, or in Scotland of any crime or offence, or has after due inquiry been judged by the General Medical Council to have been guilty of infamous conduct in a professional respect, the General Medical Council may if they see fit, by order, to be made either at the inquiry or at any subsequent time, direct that the name of such medical practitioner shall be and remain erased from the Medical Register for a limited period to be specified in the order; and may from time to time, by subsequent order or orders, vary such period, and at the expiration of the period specified in any such order or subsequent order, the Registrar shall, unless otherwise ordered by the General Medical Council, restore the name of the practitioner to the Medical Register.

2. Where the name of a registered medical practitioner has been erased from the Medical Register by order of the General Medical Council for any of the causes specified in Section 29 of the Medical Act, 1858, such practitioner shall for as long as his name remains erased from the Medical Register be deemed to be deprived of every diploma or degree conferring a qualification to practise medicine, surgery, or midwifery possessed by him. Any practitioner who in contravention of this section shall use the name, title, or description of any diploma or degree of which he is by this section deemed to be deprived shall be guilty of an offence under Section 40 of the Medical Act, 1858, and all provisions of the said Act in relation to offences under the said section shall apply accordingly.

It will be seen that the object of the above clauses is twofold—first, to give clear power to the General Medical Council to erase the name of an offending practitioner for a limited period and at the expiration of that time to restore the name; and, secondly, to provide that while such period lasts the said practitioner shall be virtually deprived of all titles and qualifications entitling him after registration to practise, so that any such practitioner who does practise in contravention of this provision will be guilty of an offence under Section 40 of the Medical Act. The clauses meet two great defects in the existing powers of some of the qualifying bodies—the inability to withdraw in the case of an offending practitioner the titles and qualifications which they have given, and the want of power to restore the same when the period of punishment has passed. It is notorious that in some of the most serious instances of crime or professional offence the offender still retains his title and, if he is not in prison, continues to practise on the strength of it. On the other hand, it is equally well known that many of the offences for which men are removed from the Register are of such a nature as not to call for the erasure of their names for more than a limited period, but many licensing bodies have not the power to restore their names. Unless these defects can be remedied either names which should be removed will be permitted to remain on the Register or gross injustice will be done by inflicting a permanent disqualification when only a temporary one is called for.

It will be seen by our report[1] of the proceedings of the Royal College of Physicians of London that this body objects to the second clause. Even if it has already ample powers of discipline in its own hands, we do not see why the College should object to a general clause giving uniformity to the law of punishment. We cannot but hope that further consideration will induce that corporation to fall in with the general demand that all licensing bodies should be brought into coördination with each other through the General Medical Council for the public weal and for the measured and uniform punishment of offences against the public good. The universities were supposed to be the only obstacle in the way of such legislation. They have taken a public-spirited view of the question, and we hope that the Royal College of Physicians of London will upon reflection withdraw its objection. Without unanimity it is hopeless to go to the Privy Council or to Parliament. With unanimity it seems probable that this great anomaly may be effectually stopped. As we understand the matter, however, this question is so far only in the preliminary stage. The General Medical Council has not yet had a chance of hearing the results of the inquiry by the President as to the attitude and feeling

[1] THE LANCET, Feb. 4th, 1899, p. 333.

of the qualifying bodies towards these two clauses. Still less has it had the opportunity of expressing itself as to the necessity for the amendment of other parts of the Medical Acts which in the judgment of many greatly need alteration. Possibly when this question of the amendment of the Medical Acts comes before the General Medical Council other questions will be raised, so that the objection of the Lord President to deal with the amendment of one provision alone will no longer have force. It will be something gained, however, if unanimity can be secured with respect to these two clauses which seem to make no unreasonable demand on the qualifying bodies.

A RECENT report drawn up by the medical officer of health to the London County Council—Mr. SHIRLEY MURPHY—effectually sums up the case both for public control in regard to supply of milk and for the abolition of private slaughter-houses In this commendably short but pregnant report Mr. SHIRLEY MURPHY expounds the position under both heads in such decisive terms as should leave little doubt as to the proper steps which should be instantly taken for the elimination of a double reproach on this branch of our sanitary administration. The report deals first with the statements of the deputations which attended before the Public Health Committee of the London County Council on Nov. 3rd, 1898, on the question of the proposed abolition of private slaughter-houses in London and with the representations subsequently made to the committee on the subject. It was drawn up in consequence of an instruction given by the chairman of this committee. The views of Royal Commissions on the subject of private slaughter-houses and the ills that may arise out of them are well known, clear and decisive, and the question remains for consideration as to how to give effect in London to the recommendations enjoined. In regard to milk Mr. SHIRLEY MURPHY points out that the following administration is necessary. The owners of cows in London will be required to notify to the Council every case of disease of the udder. As is well known the latest Royal Commission stated that according to their experience the conditions required for ensuring to the milk of tuberculous cows the ability to produce tuberculosis in the consumers of such milk is tuberculous disease of the cow affecting the udder. The Council will employ a veterinary inspector to examine all cows with diseased udders and determine the nature of the disease; and if this be found to be tuberculous the cows will be slaughtered. Periodical inspection of cows in cowsheds will be needed with a view to enforcing the requirement of notification, for the Council will require the slaughter of all cows affected with tuberculosis of the udder or exhibiting clinical symptoms of tuberculosis. If, when the animal is slaughtered, it is found that an error in diagnosis has been made the Council will compensate the owner of the cow. Further, samples of milk sold in London will be taken and milk vendors will be required to supply sufficient information as to the sources from which the milk is derived. If such milk is found to be tuberculous the Council will require from a local authority in whose district the cows are situated "full information and veterinary reports concerning the cows, byres, &c.," and if dissatisfied with the report will, with the sanction of the Local Government Board, make an independent inspection of the cows. Obviously the Council will require the aid of a laboratory specially set apart for this purpose. The recommendations of the Public Health Committee concerning milk-supply have not met with opposition and it is to be hoped therefore that the clauses each and all will soon be adopted in order that the sale of tuberculous milk may be limited if not altogether stopped. One small omission we notice. We do not find any reference to the milk imported from Holland and elsewhere into this country. We believe that the importation of frozen milk is rapidly growing and clearly this milk should not be left beyond the pale of administrative control.

In regard to inspection of meat, there were several dissentient views expressed by members of the deputations who addressed the committee and directed in the main to the question of the abolition of private slaughter-houses. Some said that this abolition would "practically destroy the purchase of English farmers' cattle," for "the only customer practically so far as London is concerned is the man who has a private slaughter-house of his own." Others said that the metropolitan cattle market of the City Corporation "might almost as well shut its gates"; butchers "would neither take the trouble nor would they go to the extraordinary expense and inconvenience of sending their servants to a public slaughter-house in order that they might slaughter the animals which have been bought." As a matter of fact where the system of control suggested has been tried, as on the continent, it has been found to be, as the result of a number of years of experience, not only a valuable protection to the public but acceptable to all honest butchers. Moreover, the members of the Royal Commission on Tuberculosis who visited Germany reported that "all the public slaughter-houses in Germany are self-supporting" and there is no reason why this should not be so in London or in every city and town. In elucidation doubtless of this view, Mr. SHIRLEY MURPHY'S report is accompanied by a communication from the architect of the London County Council upon the public slaughter-houses in continental cities visited by him. Mr. SHIRLEY MURPHY deals ably with the various objections raised by the sanitary authorities in London who have communicated their view on the subject to the Public Health Committee. These objections bear chiefly on the question of cost.

In reviewing the whole subject it is perfectly clear that the objections raised to a systematic inspection and control of our meat-supply and milk-supply dwindle into the merest insignificance compared with the infinitely broader, and more important question of the preservation of the health of the community. The action of the Legislature is therefore most urgently and promptly needed in this matter. As Sir RICHARD THORNE in his excellent Harben Lectures has ably said, "The properly administered public slaughter-house is demanded as an act of justice to those trading in meat; it is demanded in the interests of public health and decency; it is demanded for the prevention of cruelty to the lower animals; and it is demanded in order to bring England, if not the United Kingdom, somewhat nearer to

the level of other civilised nations in this matter." To which sentiment we have nothing to add.

WE publish to-day the third and concluding part of our summary of the first report of the Royal Commission on the Metropolitan Water-supply. We must congratulate the Royal Commissioners on the promptitude with which they have dealt with the evidence which has been given to them on the subject of the intercommunication of the water companies' mains, a subject which forms one complete division of the reference which was entrusted to them. The report given by the Commissioners on this point is to the effect that a well-considered scheme of intercommunication is not only useful but necessary in the interests of the water consumers, and in making their report the Commissioners are careful to point out that the carrying into effect of such a scheme will not prejudice in any way the question of the advisability of the purchase of the water companies' undertakings, or the question as to whether it is advisable that the water companies should be placed under more stringent control. The advisability of an increased number of intercommunications between the companies' mains has been rendered urgent by the failure of the supply of the East London Waterworks Company during last summer. We have already insisted that everything possible should be done to ensure an adequate supply of water for East London next summer and we have pointed out that it is highly desirable that some temporary provision to make good the deficiencies of the supply of the East London Company should immediately be made. We are glad to see that the recommendations of the Commissioners are fully in accord with what we have already advised on this subject. The Commissioners do not commit themselves to the details of any of the schemes of intercommunication which have been brought before them, but they emphasise the fact to which we have already called attention that the present Battersea station of the Southwark and Vauxhall Company ought not to be used for a longer period than is absolutely necessary. The proposals of the associated metropolitan water companies with regard to intercommunication which were laid before the Commissioners and which we have already published *in extenso* have been embodied in a Bill of which we give a summary in our present issue (v. p. 396). After the recommendation of the Royal Commission that some system of intercommunication ought to be immediately adopted so that the East London Company may be enabled to give a constant supply during the present year there can be no doubt that Parliament will promptly deal with the question and that an Act will be speedily passed to effect this purpose. Some of the provisions of the Metropolitan Water Companies Bill need careful consideration and some, in our opinion, should in the public interest be considerably modified before the measure is allowed to pass into law. We must, however, for the present content ourselves by congratulating the people of East London on the probability that they will this year be free from the inconvenience and suffering to which they have recently been subjected by the failure of the East London Waterworks Company to give them an adequate supply.

Annotations.

"Ne quid nimis."

THE QUEEN'S SPEECH.

IT is impossible to peruse the Queen's Speech without being struck by the great and growing importance of disease prevention and of the conservation of the physical well-being of the people as matters of legislative and administrative concern. The Upper House is told by Her Majesty of the unremitting efforts which are being made to prevent the extension of plague in the Indian Empire and to provide relief for its victims. The measures taken to deal with the distress in the West Indies consequent on the great hurricane form the subject of another paragraph. The Commons are told that the water-supply of the metropolis is to engage attention, that the Factory Acts are to be amended, that further legislation to prevent the adulteration of food is to be undertaken, and that local authorities are to receive additional powers with regard to the housing of the working classes. It can hardly be denied that the beneficent educative influence of the medical profession on public sentiment and opinion has been one of the causes to which is due the fact that such legislative proposals as these bulk largely in Parliaments at the present day. As practitioners of the healing art medical men are continually engaged in battling with existing disease. Both individually and in various corporate capacities they are at the same time doing their utmost to remove the causes of diseases, and many Acts of Parliament and many organisations for the promotion of social welfare owe their origin and the principles which inspire them to medical initiative and advocacy. While, however, the Queen's Speech contains much that is excellent in purpose, a large part of which we were able to forecast last week, its most remarkable feature from a medical point of view is its absolute silence on one question which at the present time is most needful of legislation, is ripe for legislation, and has been the subject of what amounts almost to Ministerial promise of legislation. Needless to say, we speak here of revaccination. Whatever be the faults of the conscience clause—and as it stands in the statute book and is being administered in the country they are numerous enough and manifest enough—it at least has the great compensating advantage that it opens wide the door by which a large and statesmanlike measure of revaccination may be introduced. Indeed, no conscience clause should ever have been proposed or passed without the accompaniment of a revaccination clause. But the Government's policy in vaccination matters appeared to be guided by no principle, and it was only when a second reverse threatened them in the House of Lords that at the last moment they succeeded in obtaining the invaluable support of Lord Lister, and through him of a majority of the Lords present, by means of statements which could not be looked on as very far short of pledges regarding legislation for revaccination to be considered in the recess and to be introduced when Parliament should again meet. As the most distinguished member of the medical profession in Parliament, as the member who, having first satisfied himself of the intentions of the Government on this subject, thereupon publicly stated that he was satisfied and so saved the Government from defeat, it is impossible for Lord Lister to allow the matter to be passed over and we are convinced that he has no intention of permitting it so to rest. No man knows better than the Chairman of the Jenner Institute the great and immediate need that exists for the protection of the adolescents and adults of this country against small-pox, and how greatly

that need has been intensified by the very Act which he succeeded in getting his colleagues in the House of Lords to accept even after the Prime Minister had failed. Some strong man, if Lord Lister does not come forward, must make it his business to see that the Government, for their own credit and above all for the ublic welfare, make no undue delay in fulfilling not merely the letter but the spirit of their expressed intention, and introduce, not at the fag-end of the session but in ample time for its safe passage through Parliament, a measure which shall at least place revaccination on the same footing with primary vaccination as regards statutory requirement and provision for its performance. Independently of any pressure by the medical profession or by the better educated of the general public the mere self-respect of the Government requires that they shall introduce and pass such a Bill, and it is surely out of the question to suppose that they can have any other purpose. In the general interests of public business it is important, however, that an immediate announcement should be made on the subject and we regret that such an announcement has been omitted from the Queen's Speech.

THE REGULATION OF STREET TRAFFIC.

WE are proverbially slow to move in administrative affairs in this country and especially in London, so that when at last steps are taken the movement appears drastic. The recent police order prohibiting the "crawling" of cabs along certain of our thoroughfares is a case in point. The order has brought both convenience and inconvenience to the travelling public. There is less impediment to the great omnibus traffic, but there are much fewer chances of engaging a cab at any point. Indeed, during the past week persons have had literally to "hunt" for a cab or to walk to the nearest rank. Whether this regulation is a hardship to "cabby" or not is a question with which we have little to do. It is to be hoped, however, that other regulations will be extended to omnibuses with a view to improving the services and we should like to see the equipments of this vehicle improved also. It is a notorious fact that there are too many omnibuses on the London roads. The omnibus may be stopped with few exceptions at almost any given point which inevitably leads to a congestion of traffic only equalled by the "crawling" cab. We have on a previous occasion urged that the omnibuses should have recognised calling stations and that they should be forbidden to stop for the purpose of picking up pedestrians at any point other than a recognised or official stopping place. We are surprised that the omnibus companies do not themselves adopt this plan, since considerable wear and tear (especially as regards the horses) would be saved while the service would be materially accelerated. Further, by such a system the chances of accidents arising from the omnibus failing to stop on passengers leaving or entering the vehicle or of the horses starting at a critical moment would be reduced to *nil*. This we should have thought would have appealed to the companies purely on the score of avoiding compensation claimed for injuries arising through such circumstances. It is quite certain that our street traffic can be improved under stricter police regulations. The number of omnibuses running to and fro should be reduced or else the greater number of them should be compelled to avoid the congested thoroughfares. For example, the omnibuses going west and east might be made to take the Thames Embankment as a clear and "through" route to and from the City. We are sure that it would pay the companies to run some of their vehicles by way of the Embankment from the City to Charing-cross. A large proportion of the passengers getting into an omnibus at Charing-cross going eastwards require to go the whole way to Liverpool-street, and *vice versâ*. The omnibus itself needs considerable improvement. There is not comfortable room for 12 persons inside. The lighting is often inadequate and absolutely precludes reading. The outside of an omnibus is so much lost carrying space in wet weather. Cannot this be obviated? Even when the rain ceases the accommodation provided is not only uncomfortable but dangerous. There can be little doubt that the aprons which have been well soaked in a shower of rain are responsible for many a chill with serious sequelæ. Now that our police authorities seem to be seriously taking steps for the better regulation of vehicular traffic it is to be hoped that improvements will be commenced all round. They are certainly needed, but all kinds of vehicles contribute towards blocking the way and the regulations therefore should be made to apply uniformly.

ROYAL COLLEGE OF PHYSICIANS OF LONDON: THE WEBER-PARKES PRIZE.

WE would call the attention of our readers to the fact that the second award of the Weber-Parkes prize and medals (to be awarded triennially to the writer of the best essay upon some subject connected with the etiology, prevention, pathology, or treatment of tuberculosis, especially with reference to pulmonary consumption in man) will be made in 1900. The adjudicators have selected as the subject of the essay for that occasion—"The Ætiology of Human Tuberculosis and the Assistance which a Knowledge of the Ætiology may render to the Task of Prevention." The essay must be based on the original work and observations (experimental or other) of the author and must include a detailed exposition of the methods employed and their mode of application. The value of the prize is 150 guineas and a silver medal. A similar medal, distinguished as the second medal, will be awarded to the essayist who comes next in order of merit. The award will be made on some day previously to Oct. 18th (St. Luke's Day), 1900.

MOSQUITOES AND MALARIA.

IN THE LANCET of Nov. 12th, 1898 (p. 1300) our Rome correspondent mentioned that Dr. Amico Bignami, *privat-docent* in pathological anatomy in the University of Rome, working in concert with Dr. Dionisi, also of Rome, experimented in 1896 on the possibility of engendering malarial fever by means of the punctures of mosquitoes. Our correspondent returned to the subject in THE LANCET of the following week (Nov. 19th, p. 1371), adding that it had been alleged that Dr. Bignami's mosquito hypothesis dated as far back as 1894 and furthermore giving an outline of a controversy as to priority of discovery which had arisen between Dr. Bignami and Dr. G. B. Grassi, ordinary professor of comparative anatomy in the University of Rome. In the first of these two letters our correspondent wrote that Dr. Grassi "succeeded last summer in completing a series of observations by which he ascertained and determined the mosquito tribes which had power to convey the disease." It appears, however, that the mosquito theory of malarial fever was not then by any means broached for the first time, for we have now before us a portion of the printed proceedings of the Philosophical Society of Washington, D.C., United States of America, showing that on Feb. 10th, 1883, Dr. A. F. A. King read a paper entitled "The Prevention of Malarial Diseases, illustrating *inter alia* the Conservative Function of Ague." After enumerating 20 theories or maxims relative to the genesis of malarial fever the abstract of Dr. King's paper proceeds as follows: "These generally admitted facts were insusceptible of scientific explanation by the marsh fever hypothesis of Lanscisci (*sic*), but were capable of

explanation by the theory that marsh fevers are produced by the bites of proboscidian insects, notably in this and in some other countries by mosquito bites. A review of the natural history, habits, and geographical distribution of the mosquito was next presented in explanation of the 20 statements above quoted. In discussing statement 15 [i.e., that of all human races the white is most sensitive to marsh fevers, the black least so] it was maintained that the comparative immunity of the black races was largely due to color, the dark complexion of the skin being another illustrative instance of 'protective coloring' so often observed in other animals, and by which, in this instance, the negro was protected from the *sight* and consequently from the *bite* of the mosquito; a similar protection being further secured by the offensive odor and greasiness of his cutaneous secretions. ..... In further support of the mosquital origin of malarial fevers numerous noted medical authorities were cited, showing that in all parts of the world where these diseases prevail immunity was secured by protecting the body from mosquito bites. The geographical distribution and seasonal evolution of mosquitoes and other proboscidian insects were shown partially to agree with the times and places in which malarial diseases prevail, though from lack of information conclusive evidence on this point was yet wanting." The abstract concludes with suggestions for the prophylaxis of malarial disease by personal protection from all winged insects, especially during evening and night, by gauze curtains, veils, &c., and by inunction of the body with terebinthinated, camphorated, or eucalyptalised ointment or liniment.

THE WORKMEN'S COMPENSATION ACT.

THIS much-abused—almost universally-abused—Act has now been in operation for upwards of six months, and so far as its administration in the neighbourhood of Newcastle is concerned it must be a great disappointment to its framers. We were told that the Act would diminish litigation, but so far the exact opposite has been the result. Every day cases are reported in the newspapers as settled in court on the old lines. An action is brought in the county-court, the usual contradictory evidence is given, and the case is adjudicated upon as it would have been had no such Act been passed, with the result that should the masters lose or win they are saddled with considerable legal expenses. The services of the official referees are not called into requisition, and so far as that principle is concerned the Act seems to be a dead letter. The number of accidents has very much increased to the manifest advantage of the lawyers and those members of the medical profession appointed by the masters, the men, and the insurance companies to look after their interests. The men seem hardly more satisfied with the Act than the masters, and as time goes on this piece of legislation and similar legislation which it is said is sure to follow must have the effect of still further separating the men from the masters. The effect will be far-reaching and nowhere is it likely to be more felt than by the medical charities. Subscriptions to these organisations from the employers are already being diminished and are likely to cease altogether. The so-called workman who is only allowed to work for eight hours a day will have to support the hospitals and dispensaries himself—which, indeed, he is well able to do. Not only so, but the aged and in any way damaged man, whether from physical infirmity or moral propensity, will inevitably cease to be employed. The trades unions will not allow a man to work for less than the wage which a strong man can earn, and this again will throw more men out of employment for the masters will be only too ready to dispense with their services. It remains to be seen how the great mutual societies, such as the Northumberland and Durham Miners' Permanent Relief Fund, will be affected. At present both men and masters contribute to this really splendid fund for the relief of those accidentally hurt and for aged members. It is more than likely that the masters' contributions will be withdrawn. If so the society will cease to support members injured by accident and will provide old-age pensions only for the members. It is certain that some means will have to be devised other than the Poor-law for the advantage of men deprived of work under the Workmen's Compensation Act—men who but for such legislation would have continued at work for some years.

THE WEATHER IN 1898.

THE exceptional warmth and drought of 1898 are well brought out by a series of observations taken at Sevenoaks by Mr. W. W. Wagstaffe, F.R.C.S. Eng. The differences between the maximum temperatures for each month and the corresponding figures obtained from 10 years' observations at Sevenoaks were as follows:—January, 7° higher; February, 4° higher; March, 2° lower; April, 1° higher; May, 5° lower; June, 4° lower; July, 1° higher; August, 2° higher; September, 8° higher; October, 5° higher; November, 2° higher; and December, 7° higher. The actual maxima for each month were as follows:—January: 54° on the 30th. February: 55° on the 1st. March: 60° on the 18th. April: 64° on the 8th. May: 73° on the 22nd and 23rd. June: 75° on the 18th. July: 80° on the 15th and 16th. August: 85° on the 14th and 22nd. September: 88° on the 8th. October: 64° on the 2nd and 3rd. November: 58° on the 10th; and December: 55° on the 4th. The average maximum for September was 71°, being the highest average for any month of the year. The rainfall for the year was 20·65 inches, being 11·41 inches less than the average of 10 years at Sevenoaks. The rainfall was below the average in every month of the year except May.

MIDWIVES AS ILLEGAL PRACTITIONERS IN NEW YORK.

THE *Medical Record of New York* has recently published an instructive article on the midwives question in that city by Mr. Eldridge T. Gerry, President of the New York Society for the Prevention of Cruelty to Children. Previously to 50 years ago the midwife in the United States was practically a monthly nurse working with the regular medical man in charge of the case. The influx of foreigners since then has introduced the midwife in all the forms and with all the prejudices of the particular country from which the foreigner has come. The article shows that the development of the midwife has been disastrous to children and often to women who have been admitted into homes and hospitals enjoying a sort of protection under articles of incorporation under the Hospitals Acts. The incorporators are usually the immediate relatives and friends of the midwife and persons of no *locus standi*, perhaps living in other States. In such homes pregnant women are treated. Abortion is often procured. The children are neglected. Sometimes they are left in the street, sometimes they are "adopted," and in the latter case blackmailing operations are often tried on respectable people who have "adopted" them and perhaps come to be attached to them. The midwife in charge of such a home assumes the title of doctress and offers to "treat female diseases," "irregularities," guarantees success in every case, undertakes confinements, &c., &c. This evil has grown to such an extent that legislation has been procured requiring the certificate of the State Board of Charities to approve the organisation and incorporation of such institutions and authorising the Board to apply to the Supreme Court for the cancellation of a certificate of incorporation of institutes

not having the approval of the State Board. Unfortunately, the State Board does not seem to have been very active in the use of its powers. In 1893 the Society for the Prevention of Cruelty to Children took action and secured the conviction of several notorious keepers of so-called "lying-in asylums" who advertised ostensibly for that purpose in the daily papers, but whose places were used for the purpose of criminal abortion. One typical instance is given in which Magistrate Pool expressed a strong opinion that the managers of the corporation were mostly relatives of the defendant; that the defendant was not lawfully authorised to practise medicine, but called herself a doctress and conveyed to unsuspecting persons that she was a legal practitioner of medicine, &c. The writer of the article points out that the case has not yet been disposed of in the trial court. Meantime the evil is great. One of the difficulties, the writer of the article suggests, is that there is no registration of midwives by competent authority and that no physician attends the home. He thinks "the remedy is very simple' and it consists of a Bill requiring the registration of midwives, making it penal for a woman to practise without registration, and placing the control of the matter and of the midwives in the hands of the local county medical society, with power to remove from the list those who violate the provisions of the Bill. In addition there should be a proviso forbidding any incorporation of such midwives with other persons for any purpose incidental to, or connected with, their business. It is interesting to notice that in New York as in Chicago this kind of legislation is almost forced on the legislature by the scandals of untrained and uncontrolled midwives.

INDIAN AND COLONIAL STUDENTS IN EDINBURGH.

ON Jan. 27th a meeting was held in Edinburgh to consider the question of providing a residence or residences for the Indian and colonial students attending the University. The circular calling the meeting had been signed by Professor Crum Brown and Professor Prothero. At the meeting the chair was occupied by Sir William Muir, and among those present were: Professor Sir William Turner, Professor Sir Thomas Grainger Stewart, Professor Rutherford, Professor Crum Brown, Professor Seth, Professor Wallace, Professor Prothero, Professor Kirkpatrick, Professor Geddes, and Sir T. Batty Tuke. A report was given of what had been done in London towards promoting the educational federation of the Empire. From the statistics it was shown that last year there were in all 227 Indian and colonial students in attendance at the classes of the University, exclusive of those who were attending extra-mural classes and other teaching institutions. There was probably more Cape-Dutch spoken in the University than Gaelic. The number of colonial students had, however, been rather on the decrease during recent years, this being due partly to the improvement of University teaching at Cambridge and other English medical schools, partly to the increase of residential facilities at other universities, and partly also to the fact that English universities had strengthened their ties with colonial universities by recognition of a two-years' study towards graduation and by other points in connexion with scholarships, &c. Recently one of the colonies had enacted that its students holding scholarships should only attend residential universities, and residential facilities would probably soon be established in connexion with the re-organised University of London. The Australian Club and the South African Union, though useful places, did not supply the want. A residential colonial house would be a means of bringing together all the colonies and of fostering a sympathetic and statesmanlike spirit. Sir William Muir moved and Professor Prothero seconded: "That this meeting cordially approves and warmly supports the suggestion of providing a residence or residences for the use of members of the very large body of students attending the University from the colonies and India; and also that this meeting expresses its sympathy with the work already done by the London committee and pledges itself to support their efforts." Professor Crum Brown moved, "That a committee be appointed to forward the matter in conjunction with the London committee and to arrange for a joint meeting to be held in Edinburgh at a subsequent date." Both motions were carried. The first meeting of the committee thus appointed was held on Jan. 3rd at the University Union. Several general suggestions were brought forward which met with the approval of the committee. It was agreed that a maximum of 25 residents should be adhered to as the most suitable number for the residential colonial houses and that it would be advisable eventually to have a separate house for each colony, although in the meantime this might not be practicable. It was estimated that the sum required for each house furnished, and including a reserve guarantee against possible deficiencies, would amount to from £5000 to £6000. The amount might be raised privately by colonists and other interested individuals, and ultimately applied to the erection or purchase of buildings, while the income from the funds might meantime be employed in renting one or more houses as might be required. These buildings might be managed by special committees appointed by the University Court which should have as conveners representatives of the Colonial Government.

BACTERIOLOGY OF TYPHUS FEVER.

TYPHUS fever has undergone a great decline in both England and Scotland during the last 30 years and has been comparatively rare in London for 20 years. An outbreak having occurred in Edinburgh last November, as mentioned in THE LANCET of Dec. 3rd and 10th (pages 1509 and 1588), Dr. Andrew Balfour and Dr. Charles Porter, members of the staff of the Edinburgh City Hospital, took advantage of the opportunity presented for bacteriological investigation and have published a preliminary notice of their results in the February number of the *Edinburgh Medical Journal*, with the reservation that "it is not intended at present to make any comments on this research nor to put forward as yet any theory regarding it." Seven cases of undoubted typhus fever were examined post mortem and in all of them a diplococcus was found. In six of these cases an examination with the usual precautions was made of blood from the heart, the spleen, and the lung. In four of the six cases the diplococcus was present in each organ. Of the remaining two, one showed the organism in both spleen and lung but not in the heart, while the other exhibited it in the lung only. In the seventh case the examination was limited to the spleen. Microscopically, under the ordinary high power the organism appeared as a well-marked diplococcus, apparently about 2 μ in transverse diameter, with no appearance of a capsule. It stained well with carbol fuchsin or gentian-violet and retained the stain by Gram's method. In some instances it tended to occur in chains, tetrad formations, and small clusters, but generally it was found as a separate diplococcus. It grew rapidly in broth and milk and seemed to possess the power of coagulating the latter in from 24 to 48 hours. It was easily cultivated on agar, blood serum, Löffler's blood serum, and potato. There was no formation of gas in glucose jelly. The most favourable temperature for its growth appeared to be 37° C. Blood from the thumb in 19 undoubted cases was examined by means of films, hanging

drops, and broth cultures. 15 of these were acute cases, ranging from the fourth to the fourteenth day of fever, and in every case large numbers of diplococci were found after the broth had been incubated at 37° C. for from 12 to 48 hours. Many of the cases were examined on several occasions and at no time was the diplococcus absent. In addition, seven control cases were examined, one being a case of scarlet fever, one of measles, the others being cases exposed to the infection of typhus fever but showing no symptoms of the disease. In only one of these, a quarantine case, was the diplococcus present, in reference to which the suggestion was made that the patient, a boy, might have already had a slight and unrecognised attack of typhus fever.

SEWER VENTILATORS.

THE sewer ventilators in our streets are an abomination and more especially when they are not elevated. They cannot be dispensed with, as otherwise the evil emanations of a sewer would probably be forced up into the houses and thus a worse state of things would be established. But at least these ventilators should be raised well above the average breathing level instead of being sunk at the street-level pouring forth disgusting and poisonous stenches immediately under the pedestrian's nose. As a correspondent has pointed out in a recent communication to us bearing on the prevalence of diphtheria, this disease is most common in houses abutting on the sewer ventilators. The distribution of the poisonous gases can be easily traced in cold weather, when a foul vapour can be seen rapidly issuing from the ventilator. The elevation of these ventilators would not entirely remove the evil, but it would considerably diminish the danger which now arises. Children, as our correspondent says, play about the jaws of the death-traps which yawn for them by hundreds in the narrow roads of our poorer districts and into the houses of which drift the foul air and vapours through each open door and window. This is a serious indictment and calls for the abolition of street-level sewer ventilators in favour of the elevated ventilators which have been adopted in many places with a marked favourable influence on the public health.

TUBERCULOSIS AND SECONDHAND CLOTHING.

MR. ANTONY ROCHE, Professor of Public Health at the (Roman) Catholic University of Dublin, has been delivering a very admirable lecture upon the Cause and Prevention of Consumption to an audience of Dublin artisans. We are all the more grateful to Professor Roche for this step because whatever boards of health and the various sanitary authorities may do the prevention of consumption must lie very much in the hands of the people themselves. Professor Roche drew attention to a point which is not, perhaps, as much insisted on as it should be—namely, the facilities for the spread of infection offered by the sale and barter of secondhand clothing. "Clothes," he says, "may not be a very common medium for the spread, still the tailoring of clothes in overcrowded workshops with the possible infection from one or more sufferers among the workmen or women is a possible danger; so is the buying of the secondhand clothes which may have been worn by consumptive owners and also the storing of infected clothes in the warehouses of pawn-offices. I long ago advocated the compulsory disinfection of all clothes in pawn-offices by the sanitary authorities as a safeguard against the spread by them of this and other infectious diseases." With regard to cheap tailors' workshops much has been done since Mayhew in his "London Labour and London Poor" drew his graphic pictures of the unhealthy workshops and "Parson Lot" fulminated with all the strength of his fiery nature against the same evil, but much still remains to be done. As to pawnshops we doubt whether anything has been done, and they certainly are likely to be fruitful sources of infection. Professor Roche's lecture ought to do a great deal of good. The artisan, though naturally ignorant upon hygienic matters, for he has never been instructed, is by no means a fool and will, we are sure, do his best not only for himself but for his neighbour when he understands the necessity for action.

AN ASSOCIATION OF SCHOOL GOVERNORS.

WE have received what we suppose we may call a prospectus of a new association to be entitled "An Association of the Managers and Governors of Schools for the Working Classes in the United Kingdom." The document is very lengthy, but so far as we gather it proposes to bind together all managers or governors of working-class schools into one association. The Association is to confine itself entirely to secular education and the subscription per member is to be 5*s*. Among other matters the association is to work for the object of getting the whole cost of the education of the children of the working classes paid for by the contributions of the whole community. This is an object with which we are in hearty accordance, for as at present constituted the education rate is the most unfair and preposterous of all the taxes which the long-suffering ratepayer has to provide. The circular is signed by Mr. C. E. Luard, a county councillor for Kent, and he announces that Mr. C. G. Montefiore of 12, Portman-square, has consented to act as provisional trustee of any funds entrusted to Mr. Luard towards the objects of the Association. We are glad to see this noted for Mr. Montefiore's name is so closely connected with good work done in the matter of education that the fact of his showing interest in the Association should augur well for its future usefulness.

THE VACCINATION OF WORKHOUSE CHILDREN.

IT is not the least fault of the Vaccination Act of 1898 that it is likely to be the subject of endless debates and discordant interpretations. The "satisfaction" of the magistrate as to the "conscientiousness" of the objection of a parent is an insoluble difficulty to be removed only by being ignored. We are threatened with a Parliamentary debate on quite another point—the legality of an "offer to vaccinate" by a medical officer of a workhouse any child resident in a workhouse at the age of two months. Mr. Channing, the member for East Northamptonshire, finds that the form of vaccination contract with the medical officer of a workhouse in the second schedule of the order of Oct. 18th empowers and compels the medical officer to make such an offer. Mr. Channing, with the genuine Northamptonshire antipathy to vaccination, sees in this a violation of the section of the Act which extends the age for vaccination from three to six months and expressly provides that no pressure shall be put on the parent till four months. He has made his complaint to the Local Government Board. The Board has replied that they see nothing in Paragraph 2 of the vaccination contract to be entered into between guardians and the medical officers of workhouses which is inconsistent with the Vaccination Act of 1898. The peculiar circumstances of workhouse life, especially of children born in workhouses, whose parents generally leave the workhouse before the age of four months, suggest and justify the "offer" of vaccination to such children. No pressure is intended to be applied to the parent who though a pauper may have the sense to see the advantage of the early vaccination of her child before leaving the workhouse and of accepting the "offer" which the order in question has very properly provided. Mr. Channing and his friends will do well to be content with the temporary victory which

they have gained over the intelligence of Parliament and not to provoke discussions on this most questionable legislation. Sub-section 5 of Section 1 of the Bill, introduced at the instigation of Mr. Channing and accepted by Mr. Chaplin, was not to prevent the "offer" of vaccination at two months but to secure the same law of vaccination for the inmates of workhouses as for those outside.

MUNICIPAL BACTERIOLOGY.

THE indefatigable Dr. Waldo, medical officer of health for the Vestry of St. George-the-Martyr, Southwark, has met with a rebuff in his crusade against disease. He recommended some time ago that the vestry should undertake the bacteriological examination of doubtful cases of typhoid fever and diphtheria. Camberwell has already done this and there is no reason that we can see why other parishes should not do likewise. This proposal would involve the distribution of sterilised tubes to practitioners for the collection of cultivable material. But the Public Health Committee of the vestry would have none of it and so at the meeting of the vestry held on Jan. 24th a motion was carried to proceed no further in the matter. Wisdom, however, will, we are sure, prevail in the end.

THE INEBRIATES ACT, 1898, AND THE HOME OFFICE.

THE Home Secretary has addressed to the judges, chairmen of quarter sessions, and recorders a circular letter on the administration of this Act which may be summarised as follows. A certain number of certified reformatories may be expected to be established and ready for the reception of inmates by the time the Act comes into effective operation. This date, as we have pointed out in a previous issue, cannot be until the model regulations propounded by the Home Office have lain on the table of each House of Parliament for four weeks. The provision of State reformatories is to be for the present postponed, as it has not been possible to obtain trustworthy statistics as to the extent to which they will be required. It will be remembered that habitual drunkards who are for the fourth time within 12 months convicted of any of certain scheduled offences may be detained for a period not exceeding three years in a certified inebriate reformatory and that State reformatories are only to be used under the Act for the reception of persons convicted on indictment of an offence punishable with penal servitude or imprisonment, when the offence was committed under the influence of drink, or with drink as a contributing cause, and by an habitual drunkard. These persons can be received into certified reformatories as well as into a State reformatory and it is no doubt owing to the uncertainty as to the extent to which the former will be provided by public bodies and private individuals that the Home Secretary proposes to postpone asking the Treasury to provide funds for the institution of the latter. He has considered the possibility of adapting an existing prison for the purposes of a State reformatory and has been strongly advised against it. Consequently he suggests that on the Act coming into effect committals be made to certified reformatories only. The only other important point upon which he touches is that of the duration of the term of confinement in a reformatory which is to be imposed, and he points out that whereas he has been advised that periods of a few months will be useless for the effecting of any permanent benefit to the person committed, if the full possible sentence of three years' confinement be passed a system of licensing or probationary discharge can and will be always brought into operation as early in each case as the circumstances will allow. In addition to this he calls attention to the model regulations, as showing that the detention will not be of a punitive but of a reformatory character only. It is also stated that information will be obtainable as to the institution most suited for and likely to receive particular cases, the accused being meanwhile remanded or committed to prison. From the above it can be seen that the Act is to be given a fair trial; indeed, the reported remarks of judges and magistrates alike show that the administrators of the criminal law are prepared to welcome its provisions as soon as may be and to make full use of them. At the same time the practical question of where any individual inebriate is to be received is one which in spite of the assurance cited may be of grave difficulty. Obviously those reformatories which county and borough councils institute will only be willing to receive inmates from contributing districts, while private ones may be far to seek; and again public bodies may wait to take steps until the resources of private benevolence within their jurisdiction or within easy reach of it have been exhausted.

GONORRHŒAL ARTHRITIS TREATED BY INCISION AND IRRIGATION.

IN the *Boston Medical and Surgical Journal*, Dec. 29th, 1898, Dr. John Homans has described a case of gonorrhœal arthritis of the knee-joint treated by incision and drainage. A man, aged 25 years, had gonorrhœa and left epididymitis. After three weeks he had pain and stiffness in the knees which persisted in the left knee. The latter became swollen and tender but not red and the inguinal glands were enlarged. The bursa patellæ stood out very plainly. The urethral discharge was slight and muco-purulent. The joint became larger and the pain kept the patient awake for four nights. A two-inch incision was made over the outer edge of the patella and the capsule was opened. 10 ounces of thin, brownish, sero-purulent fluid were evacuated. The cavity was explored with the finger and several fibrinous flakes were removed. The joint was flushed with normal saline solution at 120° F., sterile wicks were passed through and the cavity was wiped out. A second douching was performed. A gauze wick was drawn through and the ends of the wound were sutured. A dry dressing with compression and a back splint were applied. On the third day the dressing was changed; the synovitis was much diminished and there was a slight serous discharge on removing the wick. On the seventh day the patient was perfectly comfortable and on the eighteenth day he was discharged. Gonococci were not found in the discharge.

POST-MORTEM EXAMINATIONS UPON A CORONER'S WARRANT.

IT will be remembered that in THE LANCET of Jan. 7th we commented upon the perfunctory manner in which a medical man had made a post-mortem examination upon the authority of a coroner's warrant. Another somewhat similar case has now occurred at St. Albans during the holding of an inquest by Dr. Lovell Drage. The facts were shortly as follows. A man was picked up in the street unconscious and conveyed to the workhouse infirmary; he had vomited freely. The workhouse nurse deposed to receiving the deceased who was then conscious but who rapidly became worse. He was admitted at three o'clock and the medical officer was sent for at half-past eight, but the patient was dead when he arrived. The medical officer, Mr. T. P. G. Wells, said that he had made a post-mortem examination and found old pleurisy and general congestion of the lungs. He did not examine the brain. The coroner said he should adjourn the inquest. Post-mortem examinations must be made with completeness. At the adjourned inquest Mr. H. L. Bates said that he had made a post-mortem examination in conjunction with Mr. Wells. He found a large cerebral

hæmorrhage. This was the cause of death. A verdict in accordance with this evidence was returned. The coroner censured Mr. Wells, pointing out that he (the coroner) had in his order made a special note to the effect that the principal organs were to be examined. Mr. Wells had not done this and he should disallow his expenses. Mr. Wells replied that he considered he had found enough evidence in the lungs as to the cause of death and, moreover, the post-mortem room was anything but luxurious. We do not think for a moment that Mr. Wells wished to mislead the jury, but there is no doubt that he did not perform the post-mortem examination strictly in accordance with the coroner's instructions.

BARBER'S ANTISEPSIS.

THE choice of an antiseptic is a matter of some importance to the hairdresser since his customers commonly expect him to be a man who can furnish them with a so-called hair tonic or wash to improve the condition of the scalp and to prevent dandruff or scurf. It is a matter of still greater importance to the public, as unwittingly the barber may be administering a hair-wash possessing dangerous properties. Seborrhœa (dandruff) is a condition caused by a micro-organism and an antiseptic is therefore indicated in such a case. There are no diplomas granted to the barber with a view of qualifying him for his business and he is not generally a man possessing any knowledge of pharmacy. He should on no account therefore be tempted to employ highly poisonous antiseptics. Yet a solution of corrosive sublimate is a favourite application with not a few. In the majority of cases the hairdresser is quite ignorant of the dangerous nature of such a preparation, but under certain conditions, as in abrasions, mercury would be readily absorbed and mercurialism might result. Corrosive sublimate should never be used for the purpose, and carbolic acid and other corrosives should be avoided, especially as there are a great number of equally effective and comparatively non-poisonous antiseptics to choose from. Such, for example, are salicylate of soda, benzoate of soda, tincture of gum benzoin, borax, beta naphthol, and resorcin, with which can be combined such pleasant aromatic as well as antiseptic oils, as eucalyptus and thymol.

NEW YORK PORT SANITARY DISTRICT.

DR. A. H. DOTY, the health officer of the port, remarks in his annual report for 1897 that during that year 220,186 immigrants arrived in the United States and of this number no less than 192,004 disembarked at New York. It is interesting to observe that nearly half the total number of foreign vessels arriving at New York during the year were British, but we notice also that a very large number of immigrants are carried by German lines. The total number of immigrants arriving at New York varies enormously year by year. In 1891 there were 445,290; in 1892, 388,486; in 1893, 364,700; in 1894, 188,164; in 1895, 258,560; in 1896, 252,350; and in 1897, 192,004. The great falling off in 1894 was caused by the prevalence of cholera in Europe which interfered very markedly with the tide of immigration. As regards the inspection of vessels arriving at New York Dr. Doty states that the immigrants are in all cases examined, but that on the transatlantic or mail steamers the crews and saloon passengers are not as a rule inspected, the deposition of the captain and surgeon being accepted. If, however, a suspicious case of infectious disease has occurred on the voyage, or is detected on arrival, a thorough examination is made, as is also the case when the vessel comes from an infected port, more especially from one where yellow fever is present. Owing to the prevalence of this latter disease at Panama during 1897 and the occurrence of cases on board vessels bound for New York a sharp look-out was kept. The patients were removed to Swinburne Island Hospital and the remaining steerage passengers were transferred to Hoffman Island for observation during five days, the crews being allowed to proceed in the ship to the docks where they also were kept under observation. Every vessel arriving from Panama during the prevalence of yellow fever there was disinfected. So, too, with regard to persons from Havana it was determined to insist upon a medical examination prior to departure. If those wishing to sail were natives or had had yellow fever they were allowed to sail, but otherwise they were kept under observation for five days. The ships' crews were not allowed on shore at Havana. Vessels arriving from Brazil when yellow fever was present were detained at New York for four or five hours only, as the length of the passage was regarded as sufficient "quarantine." The cabin and forecastle, the clothing of the crews, and the bedding were, however, disinfected in all cases. We are glad to hear that a bacteriological laboratory has been erected on Swinburne Island and that some useful work is being done thereon.

THE JERSEY MEDICAL SOCIETY AND TUBERCULOSIS.

THE Jersey Medical Society recently appointed a committee to examine into the question of human and bovine tuberculosis in the island. The report is now published and the committee find as follows. In the town of St. Helier which was chosen instead of the whole island on account of the imperfection of country death registers twenty years ago the tuberculous death-rate from 1872 to 1876 inclusive was 542, being a mortality of 4·2 per 1000 living per annum and of 182·5 per 1000 deaths, reckoning the population at 27,000. From 1892 to 1896 inclusive the total of tuberculous deaths was 305, being a mortality per 1000 living of 1·05 per annum and 106·57 per 1000 deaths, the population being reckoned at 29,000. As to bovine tuberculosis the committee find that it can hardly be said to exist. It must be remembered that the Channel Island States have instituted State slaughter-houses and recommend that all meat should be killed there and strictly examined. The committee would like to see this regulation more strictly enforced than at present. In London we have not got as far as that yet. 833 years ago the Channel Islands conquered England. It is time that we followed our conquerors' example.

DANGEROUS INCOMPATIBLES.

AN important case, but with a sad sequel, has been reported to us by a correspondent in Johannesburg. The death of a young woman was caused by the administration of a medicine containing liquor strychniæ in conjunction with liquor arsenicalis. We do not know the precise circumstances of the case, but it should be instrumental in drawing serious attention to the question as to whether such a combination should be given together in a mixture in a bottle. Of course the alkali of the liquor arsenicalis precipitates the strychnine in the form of the pure alkaloid, and the residue, which may amount to an excessively poisonous dose, may be taken in the last dose in the bottle. We have no hesitation in saying that such a mixture should never be dispensed, although we find it stated in books on dispensing that "liquor strychniæ and liquor arsenicalis are sometimes prescribed together. In this form the alkali of the latter precipitates the strychnine, so that a shake-the-bottle label must be used."[1] The risk, we consider, is too great to countenance such a mixture being

[1] Vide "The Art of Dispensing," fourth edition, 1889, page 195, published at the offices of the Chemist and Druggist, 42, Cannon-street, E.C.

dispensed. The alkaline solution of arsenic should be kept separate from the strychnine and the two should be administered separately in equal quantities. The discretion of the public is too variable a factor to be relied upon to seriously observe the notice to shake the bottle in the case of mixtures likely to contain an extremely poisonous sediment. We may add that the use of the liquor arsenici hydrochloridi would obviate all risk of strychnine poisoning from precipitation.

THE RESPONSIBILITIES OF CERTIFYING FACTORY SURGEONS.

THE Home Office has recently issued a memorandum to certifying factory surgeons reminding them of their duties under Section 29 of the Factory and Workshop Act, 1895. It very clearly states the duties of the certifying surgeon and should leave his mind perfectly clear as to the scope of his energies in this matter. The memorandum contains, however, certain information bearing on industrial lead poisoning which should be useful to the general practitioner. Thus it sums up the symptoms of lead poisoning, diagnosis, and the variety of manifestations met with as a consequence of lead poisoning. In one paragraph it is pointed out that the necessity for notification does not arise until lead poisoning is diagnosed and in general unless the symptoms are of such a nature as to require abstention from work. Explicit directions are further given as to when abstention from work should be ordered. The memorandum is drawn up by Dr. Whitelegge, the Chief Inspector of Factories, and general practitioners, as well as those more closely concerned with the question, will find some points well worth noting.

ADDITIONAL LUNACY AND VACCINATION FEES DUE TO MEDICAL OFFICERS OF WORKHOUSES.

IN another column (p. 407) a correspondent asks a series of questions relating to the fees due to a medical officer of a workhouse for services in connexion with lunatics and vaccinations. In the first place, it may be observed that it makes no difference in either of these matters whether the medical officer is resident or non-resident. Lunacy fees are payable to the medical officer not in virtue of his office but in the capacity of a medical practitioner, and the method of payment is settled under the Lunacy Acts. When an alleged lunatic is brought into the workhouse it is the duty of the relieving officer who brought the case to lay information thereof before a lunacy justice or magistrate who then summons a medical practitioner, preferably the medical officer of the workhouse who is already acquainted with the case, to his aid, for which he makes an order on the guardians for the payment of the fee—usually one guinea. The medical man is entitled to that fee for examining and reporting on the alleged lunatic, whether a detention order or an order of removal (certificate of insanity) is made or no. This is a point which is often misunderstood and which cannot be too much insisted upon. The fee is not paid for "certifying" to a person's lunacy but for "examining and reporting upon" an alleged lunatic. The justice cannot, or should not, act without first calling in a medical man—he is directed so to do by the Act—with whose assistance and upon whose report he makes either an order for 14 days' detention, or discharges the person there and then, or at once signs the certificate for his removal to an asylum. In any case the medical man is entitled to his fee. If after making a detention order the patient subsequently has to be certified for removal to an asylum by the same medical man—i.e., by the medical officer of the workhouse—which frequently happens, he is not entitled to two fees for the same case, one for examining and reporting at the time of detention and one for certifying for removal. The amount paid is entirely within the discretion of the justice, not that of the guardians who are bound to pay the sum ordered by the justice. When extra trouble is involved or extra distance is travelled a fee of two guineas is sometimes ordered. It is not usually paid "at the time," as suggested by our correspondent, but the medical officer usually presents all the quarter's account to the clerk to the guardians at the end of the quarter as a matter of convenience. As regards the question of vaccination fees, these are settled by the Vaccination Acts and the Orders issued by the Local Government Board in pursuance of the powers vested in them thereby. For the purpose of vaccinating the inmates the workhouse is a "vaccination district" and the medical officer, whether resident or non-resident, is the "public vaccinator" thereof within the meaning of the Act. At the time of his appointment a vaccination contract with the guardians for the performance of vaccinations at a given fee is usually drawn up. The medical officer is entitled to the minimum fee payable to public vaccinators under the Act, unless at the time of his appointment the guardians, with the sanction of the Local Government Board (which is not now usually given), have stipulated that he shall do the vaccinations without a fee. The guardians very rarely allow a higher fee than the minimum, excepting perhaps on the extremely rare occasions when they wish to recompense their officer by some payment which they have been unable to make in another direction, as, for example, a proposed increase of salary which the Local Government Board would not sanction.

FREE MEALS FOR SCHOOL BOARD CHILDREN.

LORD REAY, the chairman of the School Board for London, has forwarded a communication to the daily journals asking the public for a continued and extended financial support to the London Schools Dinner Association which supplies funds for providing cheap or free meals for necessitous children. The object, we need scarcely add, should commend itself to the consideration of benevolent people on the grounds alike of humanity, common-sense, and hygiene, for it is hopeless to expect that without such aid hungry and destitute children can be physically fit to profit from the education which the schools afford. The funds of the association are administered by local committees who see that the distribution of this aid is limited to those who are really in need of it. If we want to maintain a fair standard of health among board school children and to see them grow physically as well as mentally fit to take part in their struggle for life provision must obviously be made for feeding their bodies in the case of destitute and underfed children as well as for educating their minds. Donations are received by the honorary treasurer, Lord Kinnaird, 1, Pall Mall East, or by the Secretary of the Association, 37, Norfolk-street, Strand.

A DECADE OF HYGIENIC MAXIMS.

AMONGST 500 competitors Dr. Decornet of Ferté-sur-Aube has been proclaimed the winner of the prize which was offered by the publishing firm of Messrs. Hachette et Cie in their "Annual Almanack" for 1897. The candidates were required to state briefly under 10 heads the most effectual rules for preserving health, mental and bodily. The following are Dr. Decornet's 10 maxims:—1. General Hygiene: Rise early, go to bed early, and in the meantime keep yourself occupied. 2. Respiratory Hygiene: Water and bread sustain life but pure air and sunlight are indispensable for health. 3. Gastro-intestinal Hygiene: Frugality and sobriety are the best elixir for a long life. 4. Epidermal Hygiene: Cleanliness preserves from rust; the best kept

machines last longest. 5. Sleep Hygiene: A sufficiency of rest repairs and strengthens; too much rest weakens and makes soft. 6. Clothes Hygiene: He is well clothed who keeps his body sufficiently warm, safeguarding it from all abrupt changes of temperature while at the same time maintaining perfect freedom of motion. 7. House Hygiene: A house that is clean and cheerful makes a happy home. 8. Moral Hygiene: The mind reposes and resumes its edge by means of relaxation and amusement, but excess opens the door to the passions and these attract the vices. 9. Intellectual Hygiene: Gaiety conduces to love of life and love of life is the half of health; on the other hand, sadness and gloom help on old age. 10. Professional Hygiene: Is it your brain that feeds you? Don't allow your arms and your legs to become ankylosed. Dig for a livelihood, but don't omit to burnish your intellect and elevate your thoughts.

THE meeting of the Pathological Society of London on Tuesday, Feb. 21st, will be devoted to a discussion of the nature of Pseudo-tuberculosis. Specimens and lantern slides will be shown and it is hoped that as much material as possible will be brought together; any members willing to contribute are requested to communicate with the secretaries of the society. One of the objects of the discussion will be to obtain a more definite idea as to what lesions should be included under the heading of Pseudo-tuberculosis. Dr. G. Sims Woodhead will introduce the discussion and other speakers will follow, including Professor Sidney Martin, F.R.S., Professor John McFadyean, Dr. J. W. Washbourn, Mr. Pakes, and Dr. Wethered.

MR. H. E. ANNETT, M.B., Ch.B. Vict., has been appointed Demonstrator of Tropical Pathology in the newly founded school of tropical diseases in Liverpool. Dr. Annett has been studying in Koch's laboratory in Berlin for the past two years. His career at University College, Liverpool, was a distinguished one. He there obtained the Lyon Jones Scholarship (Senior and Junior) and the Holt Fellowship in Pathology. Dr. Annett was also appointed Research Scholar by the Commissioners of the 1851 Exhibition.

AT an influential meeting of the Medical Committee of the Brompton Hospital for Consumption and Diseases of the Chest held recently, Dr. Green being in the chair, it was unanimously resolved that the new treatment of tuberculosis be tried at that institution, and the subject is now under consideration by the committee of management, together with that of the establishment of a sanatorium in the country, for which funds are urgently needed.

WE regret to learn the death of Mr. Thomas Cooke, F.R.C.S. Eng., which occurred suddenly from aneurysm at 40, Brunswick-square, W.C., on Wednesday afternoon. We shall publish an obituary notice in our next issue. The funeral will take place on Monday next at 2 P.M. at Kensal Green Cemetery.

SUMMONSES have been issued for the usual February meeting of the Executive Committee of the General Medical Council. The meeting will be held on Monday, the 27th inst. Summonses have also been issued for a meeting of the Penal Cases Committee to be held on Tuesday, Feb. 28th.

THE Home Secretary has, in accordance with the provisions of the Inebriates Act, 1898, appointed Dr. R. Walsh Branthwaite to be an inspector under the Inebriates Acts, 1879 to 1898.

A CASE of bubonic plague is reported from Middelburg, South Africa, the patient being an Indian who recently arrived from Bombay.

THE Governors of the Radcliffe Infirmary, Oxford, have received a munificent gift of £2500 from Mr. T. H. Rose of Oxford.

PROFESSOR J. W. BYERS has been appointed Examiner in Midwifery to the Royal University of Ireland for the year 1899.

TUBERCULOSIS AND MILK-SUPPLY.

FRESH evidence accumulates day by day of the relation of tuberculosis to milk-supply. We have already published in our columns several communications on the subject which leave little doubt of the risk to which the health of the community is exposed by the consumption of milk infected with the tubercle bacillus. The relation thus established calls for vigorous control of our milk-supplies at home and abroad. Among those who were foremost in taking steps to ascertain how far the spread of tuberculosis could be referred to milk-supply was the City Council of Liverpool. To the credit of one of the members of the Health Committee, Mr. Anthony Shelmerdine, an investigation was started in December, 1896, when at his instance 50 samples were obtained from 50 different milk-sellers in Liverpool and were immediately submitted to bacteriological examination by Dr. Sims Woodhead and Dr. Cartwright Wood. It may be briefly stated as the result of this investigation that of the 50 samples examined five were capable of setting up tuberculosis in guinea-pigs and that accordingly 10 per cent. of the samples of milk under examination must be regarded as being infected with the tubercle bacillus. The individual details of the results of biological experiment are of interest but we may omit the 45 examples which proved to yield negative results both on subcutaneous (three cubic centimetres) and intraperitoneal (two cubic centimetres) injection. As just stated, five samples of milk appeared capable of setting up tuberculosis in the guinea-pigs inoculated. In three of these samples, Dr. Sims Woodhead and Dr. Cartwright Wood remark, both of the animals inoculated developed tuberculosis, while in two other cases only one of the animals inoculated with the milk developed the disease. "As it is a very unusual thing for animals which have been injected with tubercular material to escape the infection we must consider the question why half of the animals injected with these two samples escaped and also the possibility of these animals having contracted the disease otherwise than through the samples of milk with which they were inoculated. When a set of animals are inoculated with the milk containing tubercle bacilli from a cow suffering from tuberculosis of the udder all the animals succumb to the disease. Bollinger, however, pointed out that when such a milk was diluted sufficiently (40 to 100 times) with sound milk the mixture was unable to set up the disease. He concluded from this that the milk from a dairy, in which of course the milk from a large number of cows is mixed together, would probably not be rendered infective as a whole by the presence of the tuberculous milk, but that on the other hand the dilution would tend to render the milk as a whole innocuous. Our knowledge of other disease organisms would certainly lead us to expect that the dilution of the infective fluid would exert great influence on its virulence since it has been proved in the case of certain pathogenic germs that a certain definite number of bacilli are necessary to infect the animal and that where we pass much below this dose the animal may escape. It has also been shown that the dose required to infect varies greatly with different species of animals, and no doubt there is a considerable range in the amount required with different animals of the same species. Wyssokowitschky has tried to determine the number of tubercle bacilli necessary to infect a guinea-pig. He found that from eight to 30 virulent bacilli introduced into the peritoneal cavity are necessary to bring about infection of a guinea-pig. No doubt these results are merely approximate, as much would depend on the virulence of the bacilli experimented with and also the individual susceptibility of the guinea-pigs which can, as a rule, be quite safely ignored in an ordinary inoculation but which

would here have an opportunity of displaying itself where the quantity introduced is as small as to verge on the minimal quantity necessary for infection. Although, as we have already stated, in our experience all the animals inoculated with the milk from a cow either develop tuberculosis or remain unaffected, according as the udder happens to be affected with the disease or to be free, this need not hold in the case of milk obtained from a dairy. It is quite possible, or even probable, for a tuberculous milk to be so diluted with other milks in a dairy as to be capable of giving rise to the disease in only a certain proportion of the animals inoculated. Under such circumstances we should expect the disease to manifest itself differently and to run a much more chronic course, and this, as a matter of fact, was the case. Indeed, the disease which resulted from the injections of the milks was much less advanced than one would have expected, and as there is often some difficulty in demonstrating microscopically the presence of tubercle bacilli in such cases, we took the precaution of inoculating a second guinea-pig with some of the diseased organ which was suspected to be tubercular. As will be observed where the material was infective the disease ran a much more rapid course than in the animals primarily inoculated. This is to be accounted for by the fact that they probably received a much larger quantity of the infective agent than was present in the original milk. It will also be noted that in the cases infected directly from the milk the disease was sometimes almost localised and did not always appear to spread directly along the track of the lymphatics, but would sometimes appear to make a leap and attack some other organ, such as the spleen or liver. This is a type of the disease which we should expect to meet with where the animals had been inoculated with a weak virus or a small quantity of the infective agent. We are accordingly of the opinion that these two samples of milk contained tubercle bacilli, although the amount of the infective agent present was probably not very large. It may also be suggested, in view of these facts, that we might possibly have been able to demonstrate the presence of tubercle in some of those samples of milk which gave us a negative result if we had brought a larger quantity of the material under examination by inoculating a larger series of animals and perhaps also by allowing them a longer period in which to develop the disease."

The reports of the examination of the samples thus referred to we append :—

SAMPLE (NO. 11 IN THE REPORT).

The "subcutaneous" guinea-pig when killed on the thirty-fourth day was found to be apparently quite healthy in all the organs and no trace of tubercle could be found.

The "intraperitoneal" guinea-pig was killed on the thirty-fourth day. On opening into the abdominal cavity a small yellow point apparently tuberculous in its origin was observed on the abdominal wall. The spleen contained one small nodule but was otherwise unaffected. The mesenteric glands were enlarged and harder than normal but in one case contained a small mass of caseous material from which cover-glass preparations were made and a guinea-pig was inoculated. Microscopic examination showed the presence of tubercle bacilli. The inoculated guinea-pig was killed on the forty-eighth day. The inguinal glands on both sides were enlarged, but not extensively. The spleen, liver, lungs, and glands at the root of the lungs were all extensively tuberculous.

SAMPLE (NO. 44 IN THE REPORT).

The "subcutaneous" guinea-pig was killed on the thirty-sixth day. The inguinal gland on the side of injection was very much enlarged and filled with cheesy pus. Cover-glass preparations of this pus showed the presence of tubercle bacilli. None of the other organs were manifestly affected. A guinea-pig inoculated with the pus from the abscess on being killed 48 days after was found to have developed tubercle. The inguinal glands, spleen, liver, lungs, and glands at the root of the lung were all affected with tubercle.

The "intraperitoneal" guinea-pig was killed on the thirtieth day but a careful examination failed to show the presence of tubercle in any of the organs.

As already stated, three other samples gave immediate evidence of tuberculous infective property.

The direct microscopical examination of these milks for the presence of tubercle bacilli gave in every case a negative result, as indeed might have been expected under the circumstances considering that the infected milk was probably diluted many times with that of sound animals. The probability of the bacilli being present in very small numbers in at least two of the samples was rendered very strong by the fact of only half of the animals inoculated with these milks becoming infected and because the lesions set up were much less marked than is usually the case.

The results of this investigation indicate the desirability in the case of mixed milks—such as are obtained from a dairy—of bringing under examination a larger amount of the suspected milk by making a more extensive series of animal inoculations than has up to the present been usually considered sufficient.

METROPOLITAN WATER COMPANIES' BILL.

WE have already announced[1] that the Metropolitan Water Companies' Bill[2] has passed through the Private Bills Office. The Bill is drawn up very much on the lines suggested in the resolutions passed by the directors of the associated companies which were placed before the Royal Commission now sitting and which were published *in extenso* in THE LANCET of Jan. 28th, p. 242. The Bill, although not of great length, is one of considerable importance; it consists of 24 sections.

The preamble states that it is expedient, with the view to obviate the possibility of a deficiency of water-supply in time of drought or by reason of accident or emergency, that provision should be made for improving the intercommunication between the mains of the different companies, and that the metropolitan water companies ought therefore to be allowed temporarily and with the sanction of the Local Government Board to abstract when necessary an increased amount of water from the Thames. It is stated that since the last session of Parliament certain work has been done by some of the metropolitan water companies which would have been legal had the present Bill been passed by Parliament and it is suggested that the Bill should be retrospective as far as work already carried out is concerned. It is suggested that it is expedient that the water companies, or in their default the Local Government Board, should appoint an arbitrator who should settle any differences which may arise under the Bill, and it is further suggested that the companies should be allowed to raise money on debenture stock to carry out the provisions of the Act. The Acts which it is proposed to incorporate are the Waterworks Clauses Act of 1847 (with respect to breaking up streets, &c.), the Lands Clauses Act (except those provisions respecting the purchase of land otherwise than by agreement), and Part 3 (debenture stock) of the Companies Clauses Act, 1863, as amended by the Act, 1869.

All the metropolitan water companies are interested in the promotion of the Bill.

Under the provisions of the Bill it is proposed that within six months after it becomes an Act the water companies shall prepare and submit to the Local Government Board a statement describing the work which they propose to undertake for the improvement of intercommunication of mains. The Local Government Board are to have the power to direct inquiries with regard to the matters affecting intercommunication of the mains and are to possess the powers identical with those which they now have under the Public Health Act, 1875. The expenses of such inquiries are to be paid by the metropolitan water companies. The companies are to have power to lay new mains in the streets and to do any work necessary for that purpose in streets, bridges, &c., not only within their own limits of supply but within the limits of the statutory area of supply of any other of the metropolitan companies by permission of that company. In the case of drought any metropolitan company is to allow passage of water through their mains for the use of a company requiring an extra supply, but the mains are not to be so used to the prejudice of the arrangements for the supply of the customers of the company through whose mains the water is to pass.

The Local Government Board are to have power to

[1] THE LANCET, Jan. 28th, p. 245.

[2] A Bill for Improving and Facilitating Intercommunication between the Mains and Works of the Metropolitan Water Companies.

authorise or require companies to abstract from the Thames or its tributaries an additional amount of water should occasion require. The Local Government Board are to have power to require any company to increase their pumping power and to enforce orders and regulations to ensure the carrying out of these provisions. The Board are also to have power to attach penalties for the omission of such orders and regulations, to recover them in a summary manner, and to apply them in any way they may direct. The metropolitan companies are to have power to acquire land and easements for carrying out the provisions of the Act. An arbitrator is to be appointed within three months of the passing of the Act by the companies or, should they fail to agree, by the Local Government Board. The arbitrator so appointed is to hold his office for some period not greater than three years. His remuneration is to be settled by the water companies or, should they fail to agree, by the Local Government Board and he is to be paid by the water companies or some of them as they may agree in such proportion as the companies may from time to time agree upon or, should they not agree, as the arbitrator himself may appoint. An important clause relates to the retrospective action of the Act. It is provided under Section 13 that—

13. Anything done by any one or more of the metropolitan water companies before the passing of this Act which would have been valid and within their respective powers if this Act had been passed in the session of Parliament holden in the year one thousand eight hundred and ninety-eight and the expenditure of money by such company or companies in reference thereto is hereby sanctioned and confirmed.

The companies are to be allowed to raise money on debenture for the purposes of carrying out the Act. New debenture stocks are to be offered by auction or tender; the purchase-money of the capital sold by auction is to be paid within three months. Notice is to be given to certain officials as to the sale of the shares. The officials to be notified are the clerk of the London County Council, the town clerk of the City of London, the secretary of the London Stock Exchange, and the clerks of the various county councils who might be affected, and in the case of the East London Company the clerk of the Borough of West Ham. The stock which is not sold by auction or tender is to be offered to shareholders. Should there be a premium arising from the stock it is to be applied for the purposes of the Act. The amount of stock is limited to £600,000. Certain provisions are made between the companies as to the payment of interest of debenture stock.

MEDICAL QUALIFICATIONS IN FRANCE AND THE POSITION OF THE ALIEN MEDICAL MAN.

IN our issue of Dec. 10th, 1898, we published a communication from our Paris correspondent upon the above important subject. In this our correspondent was made to say: "The *diplôme d'Université* ..... does not authorise the holder to practise outside France herself. ..... Foreigners who wished to practise in France were allowed to do so as before under easy conditions, but they were only to receive the *diplôme d'Université*." This statement of course implied that foreigners could practise in France with the *diplôme d'Université*. This, however, is not correct and we regret that owing to an error, and one which in justice to our Paris correspondent we wish to say was in no way due to him, the statement should have appeared in our columns. Our attention was called to the matter by a correspondent and we submitted his statement to our Paris correspondent who has sent us the following: "The *diplôme d'Université* granted by the faculty of Paris gives no right to practise in France. The medical study for it is the same as for the other diploma, but greater facilities are granted to foreigners for obtaining it and studies already gone through in their own countries are allowed to count. The *diplôme d'état* alone gives the right to practise in France or her colonies and to obtain it the student before commencing his medical studies must undergo in France the examination for the *baccalauréat* (*bachelier de l'enseignement secondaire classique*) and a preliminary examination in physics, chemistry, and natural science. No remission of the preliminary examination is granted to anyone, be he Frenchman or foreigner."

THE ARMY MEDICAL SCHOOL, NETLEY.

THE winter session of 1898–99 was brought to a close on Jan. 31st, when the results of the recent examination were announced and the prizes were distributed by Sir Ralph Knox, K.C.B., Permanent Under-Secretary of State for War, in the presence of Surgeon-General Jameson, C.B., Director-General, A.M.S., Lieutenant-General Sir Baker Russell, K.C.B., commanding the Southern District, Surgeon-General Cuffe, C.B., P.M.O. of Portsmouth, the military staff of the Royal Victoria Hospital, Netley, and a distinguished company of visitors.

Colonel NOTTER, Professor of Hygiene, announced the results, reporting that the work of the session had been satisfactory, that the whole of the 50 surgeons on probation who had undergone the final examination had proved themselves fitted to receive Her Majesty's commission, that in general ability they were of fair average, and that their conduct while passing through the school had been excellent.

The subjoined lists show the final positions of the officers with the marks which they obtained at the examinations and the prizes gained at the Army Medical School.

ROYAL ARMY MEDICAL CORPS.

	Combined marks.		Combined marks.
H. P. W. Barrow	5047	W. B. Winkfield	4147
J. E. Hodgson	4796	T. C. Lauder...	4044
**A. L. Scott	4673	J. W. Leake	3925
L. E. L. Parker	4605	J. W. H. Houghton	3828
J. G. Gill	4541	D. E. Curme...	3805
G. W. G. Jones	4383	H. S. Taylor...	3803
M. H. G. Fell	4321	G. M. Goldsmith	3632
G.H. Goddard	4239	R. H. Lloyd	3454

INDIAN MEDICAL SERVICE.

	Combined marks.		Combined marks.
*J. C. H. Leicester	6387	J. N. Walker	4222
†H. Innes	5964	V. H. Roberts	4221
W. S. Willmore	5559	J. E. Robinson	4196
A. E. Walter...	5104	C. H. B. Adams	4163
C. Hudson	5029	G. King	4082
††L. T. R. Hutchinson ...	5014	T. S. Ross	4027
C. F. Weinman	4832	G. P. T. Groube	3872
H. M. Cruddas	4792	P. P. Atal	3827
A. M. Fleming	4368	W. Mc M. Pearson	3779
E. L. Ward	4341	D. C. Kemp...	3764

NOMINATED SURGEONS-ON-PROBATION.

	Netley marks.		Netley marks.
‖D. S. Harvey	2619	H. D. Packer	1993
J. M. Sloan	2545	L. Humphrey	1946
H. E. Haymes	2532	R. S. Rodger	1912
F. J. Brakenridge	2500	W. W. Scarlett	1788
G. C. Phipps	2271	H. K. Palmer	1716
N. J. C. Rutherford	2269	A. O. B. Wroughton	1713
G. J. A. Ormsby...	2192	F. Ashe	1635

The positions of these gentlemen are determined by the marks gaine at Netley.

* Gained the Herbert Prize of £20, Martin Memorial Medal, the De Chaumont Prize in Hygiene, and the Second Montefiore Prize.

† Gained the First Montefiore Prize of 20 guineas and medal.

** Gained the Parkes' Memorial Medal.

†† Gained the Maclean Prize for Clinical and Ward Work.

‖ Gained the Pathology Prize presented by Surgeon-General Hooper, C.S.I.

Sir RALPH KNOX after distributing the prizes and saying a few words to each prize-winner, especially to Mr. Harvey who entered the Army Medical School by nomination and who, he said, by his diligence had shown that nomination had proved a success, addressed the young officers in a speech of which the following is an abstract. He said he feared that his selection for the performance of the function was not peculiarly happy, for though for many years he had known much about army medical officers he had to confess that most of his thoughts were directed to ascertaining how few of them would suffice for their work and what was the minimum remuneration which would induce them to join the service. He, however, could say that his interest in the service had been very great and that he had served on many committees dealing with important questions connected with their duties. Now, he had to give them a word of encouragement on starting on their career in life. He first congratulated them on at last having completed that terrible examination period of life through which it appeared that all young men nowadays had to pass and he was very pleased to hear that the standard of their work was so high and the general results so satisfactory, and he thought that they might look forward with confidence to their lives as

members of the noblest and most continuously self-sacrificing of all professions. They must have high ideals, for a member of their service was both surgeon and soldier too. The firing of guns and rifles imposed no specially arduous task on anyone. What called for the display of all the finest soldierly qualities was the performance of these duties under fire; and it could not be said nowadays that anyone associated with the combatant army anywhere near the front was not within the zone of fire of the long range of the present field guns or that of the low-trajectory rifle. Doubtless there were men of various abilities in the class; some who had had good luck and some whose luck was bad, but with whatever ability they were equipped now that they were becoming members of the great social organism there were two qualities they should possess in order to secure success—namely, tact and courtesy—or in more homely phrase common-sense and good manners. Without these the best abilities often failed of success, and with them the deficient talent was often compensated. He would urge them to continue their reading not merely of technical works but of the best literature of their country; they should check in some way the narrowing influences of a special service. They should practise putting down their thoughts, whether technical as derived from their work or not, in writing. It was Bacon who said, "Reading maketh a full man, writing an exact man," and a medical officer in the army should be both; and the third of the three R's should not be neglected. It was most useful to cultivate arithmetical thought; they had doubtless learned something about statistics. These could not be properly prepared by anyone who did not accurately perceive the limited sense in which a fact could be stated in figures, and as army statistics afforded the information on which many all-important decisions depended he urged the careful preparation of the returns which they would be called upon to render. He feared that the remarks he had made were somewhat trite, but they contained such advice as he would give to his own son, and the short intercourse he had had with the young officers, especially the very agreeable and joyous evening of the day before, had led him to regard them as special boys of his own, whose names he now possessed, and whose careers in the future he would be always interested in. He congratulated them very sincerely and on behalf of all present offered them the heartiest good wishes for their future.

The DIRECTOR-GENERAL, after thanking Sir Ralph Knox for his able speech and for his kindness in coming to Netley, remarked that the young officers of the Indian Medical Service were sure to find interesting work in India and opportunities of distinction, for plague, pestilence, famine, and war were one or all of them nearly always present in the country they were going to. He congratulated them on obtaining their commissions. Turning to the young officers of the Royal Army Medical Corps he said that they were entering the service with a fair wind and that this was so was due to the wise policy of Lord Lansdowne who had given them the warrant which they so highly valued and whose name would in the future be ranked with that of Lord Herbert of Lea as one of the greatest benefactors of the medical service of the army. Associated with Lord Lansdowne in drawing up the recent warrant had been Sir Ralph Knox and his predecessor, Lord Haliburton, in both of whom the medical officers of the army had found firm and excellent friends.

The proceedings were brought to a termination by a few words addressed to the young officers by Surgeon-General NASH who wished them God-speed in their careers. The company was subsequently entertained at luncheon by Surgeon-General Nash and the officers of the Royal Army Medical Corps.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE forty-eighth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Jan. 31st. The Commissioners present were the Chairman (Lord Llandaff), the Right Hon. John Mellor, Sir John Dorington, Sir George Barclay Bruce, Mr. de Bock Porter, Mr. Lewis, and Major-General Scott. The witnesses examined were Lieutenant-Colonel Mark Lockwood, M.P., and Mr. William Booth Bryan, the chairman of, and engineer to, the East London Waterworks Company.

Mr. BRYAN put in a statement as to their sources of supply and a brief description of the works of the company, a table giving a description of the engines and the capacity of the pumps at the various stations of the company, and a table showing the distribution of the capital expenditure of the company from the year 1880 to the year 1896. A description of the company's works has already been fully given in THE LANCET.[1] Mr. Bryan gives in a footnote to his tables some information as to the time during which pipes last. Mains have been dug up and found to be in a perfectly good condition after having been in the earth for upwards of 60 years. The chief accidents which occur to pipes are those produced by the effects of frost and it is found also that in some districts in which the ground has been artificially made up the mains have been injuriously affected by the local conditions. Apart from such accidents no period can be assigned as the proper "life of a main."

Colonel LOCKWOOD was cross-examined by Mr. BALFOUR BROWNE on behalf of the London County Council. Mr. Balfour Browne pointed out that Mr. Charles Greaves (a former engineer to the East London Company), in giving evidence on a Bill which was before Parliament in the year 1867, said that in the year 1864 they had found that the supply of water from the Lee was barely sufficient for their requirements. In that year there was "the greatest drought within the memory of any one." The company resolved to make application to Parliament for powers to take a supply from the Thames and to increase their storage capacity at Walthamstow. In 1867 before the Royal Commissioners on the Water-supply Mr. Greaves gave evidence to the effect that he thought that the company ought not to be entirely dependent on the Lee. He was of opinion that the Lee alone could not be depended upon for the supply of East London and he proposed to combine the Thames works and the Lee works and to use the reservoirs in the Lee Valley for the storage of Thames water should occasion require.

In answer to Mr. BALFOUR BROWNE the witness said that the East London Company were taking steps to obviate a water famine in the future and that the new work would involve a large expenditure. The works in contemplation provided for the supply of an increased population. With regard to the question of control the witness said that he would be willing that the water examiner appointed by the Local Government Board and the analyst should be admitted to the works of the company. He thought that the more publicity there was with regard to the companies' works the better it would be. The analyst, had, of course, access to the taps in East London, but the witness thought that he ought also to have a right to visit the works of the company. If the undertaking were bought by the London County Council that body might obtain profits on any new works which might be made for an increased population.

Major-General SCOTT pointed out that they would also have to take the risks.

Mr. BRYAN explained the conditions on which the East London Company takes water from the Lee and the way in which water is pumped up to the lower reaches of the Lee Navigation Canal during periods of drought.

The CHAIRMAN said that they had heard something about the pumping of polluted water from the lower reaches to the higher reaches. The witness explained that the company had a pumping station at Bromley Lock. At this point the tide passes through at high water and enters the Navigation Canal. The tide flows up as far as Old Ford Lock, at which place the upper pond is about eight feet higher than the lower and the tide can get no higher up the Navigation Cut. The tidal water, however, can pass round through "back rivers" higher up. The Lee Navigation is canalised and the tide can get no further than Old Ford. Barges go up the Lee Navigation through the artificial canal. They also go up certain "back rivers" to Stratford. The vessels go to Old Ford on the tide and there are gates which open with the tide at Bromley Lock. The barges come into the Navigation Canal on the tide and the gates are closed as soon as the tide begins to ebb. The traffic into the Thames then depletes or lowers the head of water in the Limehouse Cut. At this point the East London Company have put up a pumping station to raise water from the

[1] THE LANCET, May 1st, 8th, 15th, 22nd, and 29th, 1897.

low level as the tide is rising in order to keep up the Navigation water to its proper head and to make up the loss caused by the lockage of barges going out into the Thames. The amount of water which the Conservators of the Lee have a right to take for the purposes of navigation is 5,400,000 gallons daily. This amount is made up partly by water pumped by the East London Company in the manner mentioned and partly by water which flows down the Lee Navigation. By pumping up the tidal water the company are enabled to take more water for the supply of their customers.

Mr. DE BOCK PORTER asked whether the Lee Conservancy Board acquiesced in this arrangement. The witness replied that it was a statutory arrangement and that in the Act of Parliament there was a clause which enabled the company to pump from pound to pound and to provide part of the statutory quantity by this means.

In answer to Sir JOHN DORINGTON, the witness said that the company put up temporary pumps to raise the water from one pond to another. The water is pumped up beyond Tottenham Lock but never into the reach which supplies water from the intake of the company.

In answer to Sir JOHN DORINGTON the witness said that the water of the Lee runs down the Navigation and is not under the control of the East London Company.

The witness explained to the Commissioners exactly how the water was pumped and pointed out on a map the situation of the various places to which he referred. Briefly the evidence amounted to this: The East London Company pump from the old tidal channel of the river Lee into the Lee Navigation at Bromley Lock; they occasionally pump at Old Ford Lock which is slightly higher up the Navigation channel. This water flows into the Bottom Pound Lock and the reach into which the water is pumped is four miles in length and extends to Tottenham. Above Tottenham water is pumped into the Navigation channel. The water so pumped does not go beyond Stone Bridge Lock. No brackish water is pumped to any place through which it could pass to the intake of the company near Enfield Mill. The pumping station near Bromley Lock is a permanent station; at other places the pumping is effected by portable engines.

In answer to the CHAIRMAN the witness said that during the water famine of last year there was a great deal of wilful waste and the company received a large number of letters from their customers calling attention to the waste in different places and asking them to put a stop to it. On the other hand, the company received letters from people saying that they would allow the water to run away in order "to spite them."

The CHAIRMAN said that this was a serious statement and Mr. PEMBER suggested that the letters should be produced. The witness said he had none with him but that they could be produced.

Sir JOHN DORINGTON asked the witness whether he agreed with Sir Alexander Binnie's inference that powers granted by corporations could not safely be given to water companies with regard to measures for the prevention of waste of water, and with regard to powers for testing the fittings which were used by the water consumers. The witness said that in one of their bills they had inserted clauses copied from the Manchester Corporation Waterworks Acts which dealt with these matters. The local authorities in whose districts the company gave their supply strongly objected to this supervision and the clause was therefore withdrawn.

In answer to Sir JOHN DORINGTON the witness said that the local authorities thought that the company was trying to get too much power into their own hands. He did not know, however, whether the local authorities themselves would have been inclined themselves to exercise such powers on behalf of the company had they been entrusted to them.

In answer to Mr. FREEMAN, who cross-examined on behalf of the London County Council, the witness said that the Lee Conservators had power over the water of the river and took what they wanted. He could not say what amount of water was actually taken by the Conservators for the purposes of navigation. He was unable to say how much was pumped up into the lower reaches of the river. The pumps used were centrifugal pumps and it was not possible to estimate what the amount pumped actually was. The Navigation water was kept up to its proper level and the pumping arrangements were made to effect this. When the right height of water was obtained pumping operations ceased.

Lord ROBERT CECIL cross-examined on behalf of the Hertfordshire County Council, and asked some questions about the wells.

The CHAIRMAN said that the Commissioners had "nothing to do with deciding whether or not the New River Company and the East London Company are injuring wells and springs in Hertfordshire."

Lord ROBERT CECIL contended that the case for Hertfordshire was that the supply in that county had already been drawn upon more than the supplies from the heavens warranted. If the chairman told him that the Commission would safeguard the interests of Hertfordshire he would not wish to examine further.

The CHAIRMAN said: We have nothing to do with the interests of Hertfordshire, you must take care of yourselves.

Lord ROBERT CECIL said: It is very material to Hertfordshire and it is very material for the supply of water to London.

The CHAIRMAN said: We are not inquiring into the supply of water to London but into the expediency of transferring the supply of water to London from the companies to a purchaser.

The forty-ninth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Feb. 6th. The Chairman (Lord Llandaff) and all the Commissioners were present. The witnesses examined were Mr. Isaac A. Crookenden, secretary of the East London Waterworks Company, and Sir Henry Knight, chairman of the Southwark and Vauxhall Company. Supplemental papers referring to the East London Waterworks Company's financial state were put in. Sir Henry Knight put in tables referring to the financial state of the Southwark and Vauxhall Company.

At the commencement of the proceedings Mr. PEMBER, Q.C., on behalf of the East London Company, made a statement with regard to the statistics which had been put in referring to the probable increase in the population of the district within the company's area of supply. Three different estimates had been made. Lord Balfour's Commission had suggested that the decennial increase of the district would be 25·8 per cent., and if this proved correct in the year 1937 the population would amount to 3,165,445. At an average daily supply per individual of 35 gallons, 110,790,000 gallons of water a day would be required and the cost of the work necessary to carry out this was estimated at £4,238,000. The directors of the East London Company, however, found that the increase of the population had been 17·1 between the years 1886 and 1896, and they therefore thought that the estimates made by the Balfour Commission were in excess of the amount of population which they would probably be called upon to supply.

Mr. CROOKENDEN, in answer to the CHAIRMAN, explained how the estimate of a decennial increase had been obtained and, in answer to further questions, said that between the years 1891 and 1898 the population had increased at the rate of 22·65 per cent.

The CHAIRMAN pointed out that as the average increase of the population of the East London Company's area had been higher than the average of 18·2, which was the estimate given by Lord Balfour's Commission for the whole of London, it did not seem safe to take that average as a basis for future calculations of the East London Company's district.

Mr. BALFOUR BROWNE cross-examined the witness with regard to the profits made by the company immediately before the water famine of last year and asked for an explanation of how it was that the expenses had been reduced and the profits at the same time increased. The witness pointed out that the expenses of 1896 were larger than those of 1897, because in the former year a considerable outlay had been caused by repairing the damage done by the frost of the year 1895.

The witness gave some particulars with regard to the profits recently made by the East London Company. He had not come with the figures worked out and as Mr. Pember on behalf of the East London Company had to correct the figures at a subsequent meeting of the Royal Commissioners it is useless to publish them. [Mr. Pember explained at the fiftieth sitting held on Feb. 7th, that Mr. Crookenden was unwell when he gave his evidence.]

Mr. BALFOUR BROWNE asked the Chairman to what decision the Commissioners had come with regard to addresses by counsel at the conclusion of their reception of evidence. He contended that the counsel for the companies

should first address the Commissioners and that he should have the final right to reply.

Mr. LITTLER, Q.C., and Mr. PEMBER, Q.C., on behalf of the water companies, strongly objected to this method of procedure and the CHAIRMAN remarked that the Commissioners might possibly be driven to exercise their prerogative and not hear counsel at all.

Mr. PEMBER expressed a hope that counsel would be allowed to speak. Mr. BALFOUR BROWNE was content to leave the evidence in the hands of the Commissioners.

The CHAIRMAN said that he was unable to decide from the evidence whether the London County Council were desirous that the Commissioners should advise purchase on the ordinary terms of arbitration or whether they wished the Commissioners to find that purchase would be expedient only on certain special terms. In this condition of uncertainty it would, he said, be more convenient had the representatives of the London County Council spoken first, but as they claimed to be heard last as a matter of right on the analogy of Parliamentary committees the Commissioners had decided that the London County Council had such a right and it would therefore be necessary for the counsel representing the water companies to give their arguments in what he termed alternative form, forecasting as best they could the views which the London County Council might represent. The Chairman added that the question as to who spoke first or last would not in any way influence the Commissioners.

Mr. BALFOUR BROWNE said that he thought the question as to whether the London County Council wished to buy the companies only on the condition of obtaining special terms should be referred to his clients and that he would make a statement upon the subject before counsel for the water companies made their speeches.

Sir HENRY KNIGHT, chairman of the Southwark and Vauxhall Company, took a cheerful view of the company in which he was interested. Their maximum dividend of 10 per cent., he thought, was "immediately in sight." He did not think that the purchase of the water companies would be an advantage to the water consumers of London, because under the sinking fund clauses which were now in force when further capital was raised by the companies the people of London would ultimately become possessed of all the undertakings without paying for them.

In answer to the CHAIRMAN who asked whether it would take one, two, or three centuries to accomplish this object the witness said that he had not made any calculation. He gave it as his opinion that an equalisation of the water rents throughout London would be unfair to the poorer customers, and he further gave it as his opinion that he thought it right that notwithstanding the failure to give a constant supply by the East London Company that company ought not to suffer financially for their default.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Derbyshire County District.—The annual report for 1897 on the health of this district has but recently reached us, and at a time when the reports for 1898 are making their appearance. This delay in the issue of reports is distinctly to be regretted and we think that all medical officers of health of whatever standing should use every effort to expedite the issue of their reports. The estimated population of Derbyshire at the middle of 1897 was 474,015—i.e., rather less than the population of Birmingham at the last census. The county birth-rate was 32·67 and the general death-rate was 16·27 per 1000. As regards infectious diseases we note that the death-rate from enteric fever for 1897 is considerably in excess of that of England and Wales, the chief cause of this prevalence being regarded as polluted soil, and Dr. Sidney Barwise in his report strongly urges the abolition of privies and the substitution of the water-carriage system. In the matter of tuberculosis an example has been set to the county by the late Lord Vernon who remodelled two farms in such a manner that each cow has 800 cubic feet of air space and proper regard is paid to warming and ventilation. As a result of the tuberculin test no less than 54 per cent. of the cows on the estate were found to be tuberculous. These latter were isolated and fed up for slaughter whilst the remainder were very wisely removed to new cowsheds. Each farm is furnished with a refrigerator and a centrifugal machine through which the milk is passed after milking. It is then by means of machinery which dispenses with all manipulation decanted into bottles and heated up to 186° F. After being suddenly cooled and left for two hours with the object of allowing the conversion of spores into bacilli the milk is completely sterilised by being heated for 20 minutes at a temperature of 212° F. The bottles are then hermetically closed automatically and rapidly cooled. We cordially endorse Dr. Barwise's hope "that the increased price which the milk realises will be sufficient to induce other landowners to follow the example set by Lord Vernon."

Maldon Rural District.—As usual, Dr. Thresh is setting a good example by the early issue of his annual report for 1898 on the sanitary condition of this district. The drought of last summer has not been an unmixed evil as it has brought home to the inhabitants of certain parts of this district what it means to have their springs dried up during the hot weather. They are now adopting a different attitude towards Dr. Thresh's schemes for water-supply than was formerly the case. Complaints are still heard in this district as to the nuisance caused by the unloading and carting of London manure and it is satisfactory to hear that henceforth the business will be duly regulated by by-laws drawn up for the purpose. The "Peculiar People" have not yet ceased to be peculiar in the sense that they decline to seek medical advice in case of illness, and hence infectious disease amongst them is not brought to light. It was, however, recently decided in the High Court that failure to seek medical assistance constitutes "neglect" in the eyes of the law and Dr. Thresh trusts that there may be relief from the present unsatisfactory state of affairs under this decision. By way of assistance to medical men in the diagnosis of phthisis Dr. Thresh in his capacity of county medical officer of health undertakes the bacteriological examination of sputum at his laboratory. For poor patients the charge is *nil*; for others a nominal fee of 2*s.* 6*d.* is charged. Dr. Thresh apparently looks to educational rather than to legislative measures to diminish the death-rate from tuberculous disease.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6717 births and 4275 deaths were registered during the week ending Feb. 4th. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 19·2 to 17·0 per 1000, rose again last week to 19·5. In London the rate was 19·4 per 1000, while it averaged 19·7 in the 32 provincial towns. The lowest death-rates in these towns were 11·0 in Croydon, 13·1 in Brighton and in Huddersfield, 14·3 in Norwich, and 14·5 in Hull; the highest rates were 23·5 in Newcastle-upon-Tyne, 24·5 in Gateshead, 25·2 in Liverpool, and 27·2 in Sunderland. The 4275 deaths in these towns included 340 which were referred to the principal zymotic diseases, against 380 and 329 in the two preceding weeks; of these, 98 resulted from whooping-cough, 87 from diphtheria, 64 from measles, 34 from "fever" (principally enteric), 31 from scarlet fever, and 26 from diarrhœa. No death from any of these diseases was recorded last week in Norwich; in the other towns they caused the lowest death-rates in Croydon, Brighton, Birkenhead, and Newcastle-upon-Tyne, and the highest rates in Preston, West Ham, Sheffield, and Bolton. The greatest mortality from measles occurred in Manchester, Oldham, and Bolton; and from whooping-cough in Bristol, Swansea, Nottingham, Preston, Halifax, and Gateshead. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 87 deaths from diphtheria included 32 in London, nine in Leeds, eight in Sheffield, six in West Ham, five in Birmingham, five in Leicester, five in Liverpool, and three in Portsmouth. No fatal case of small-pox was registered last week in any of the 33 large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1899.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1899.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,546,752	2	1370	991	1	307	8	25	517	—	3221	9·2	—	105	39	125	154	—	55	—	42	520	1·5	5946	17·0	112
West Districts.																										
Paddington	128,794	—	25	28	—	7	—	—	14	—	74	7·5	—	—	1	4	3	—	—	—	2	16	1·6	163	16·5	123
Kensington	172,899	—	26	20	—	8	1	1	28	—	84	6·3	—	—	1	3	3	—	2	—	1	10	0·8	225	17·0	135
Hammersmith	108,785	—	26	14	—	6	—	—	10	—	56	7·2	—	—	1	1	5	—	2	—	—	9	1·1	134	16·1	118
Fulham	130,720	—	68	46	—	6	—	1	16	—	137	13·7	—	—	3	2	2	—	3	—	—	10	1·0	141	14·1	98
Chelsea	96,721	—	17	30	—	5	1	1	9	—	63	8·5	—	1	1	6	21	—	1	—	—	30	4·0	143	19·3	152
St. George Hanover-square	80,676	—	13	13	—	5	—	—	15	—	46	7·4	—	—	1	2	—	—	1	—	—	4	0·6	88	14·2	119
Westminster	62,117	—	1	6	—	4	—	—	7	—	18	4·5	—	—	—	—	—	—	1	—	1	2	0·5	72	18·0	106
St. James Westminster	21,827	—	—	—	—	6	—	—	2	—	8	4·8	—	—	—	—	—	—	2	—	—	2	1·2	31	18·5	25
North Districts.																										
Marylebone	140,139	—	20	13	—	8	—	1	20	—	62	5·8	—	1	1	4	3	—	3	—	2	14	1·3	180	16·7	116
Hampstead	80,252	—	18	4	—	2	—	—	4	—	28	4·5	—	—	—	1	—	—	—	—	1	2	0·3	62	10·1	143
St. Pancras	214,548	—	70	32	—	16	—	1	27	—	146	7·8	—	11	4	10	14	—	2	—	4	45	2·4	351	18·7	116
Islington	348,085	—	106	43	—	26	—	1	26	—	202	7·6	—	7	1	4	13	—	2	—	2	29	1·1	416	15·6	113
Stoke Newington	35,187	—	15	2	—	1	—	—	—	—	18	6·7	—	1	—	1	—	—	—	—	—	2	0·7	30	11·1	15
Hackney	222,571	—	68	44	—	16	—	1	28	—	157	9·2	—	3	—	6	6	—	2	—	3	20	1·2	236	13·8	103
Central Districts.																										
St. Giles	37,196	—	3	1	—	1	—	—	3	—	8	2·8	—	1	—	—	—	—	1	—	—	2	0·7	60	21·0	103
St. Martin-in-the-Fields	12,142	—	2	2	—	—	—	—	—	—	4	4·3	—	—	—	—	—	—	—	—	1	1	1·1	13	14·0	182
Strand	23,016	—	1	4	—	1	—	—	—	—	6	3·4	—	—	—	—	—	—	—	—	—	—	—	38	21·5	154
Holborn	29,621	—	8	10	—	4	—	—	2	—	24	10·6	—	—	—	2	—	—	—	—	2	4	1·8	54	23·8	167
Clerkenwell	66,068	—	23	12	—	6	—	—	5	—	46	9·1	—	4	1	2	1	—	2	—	—	10	2·0	94	18·6	73
St. Luke	40,868	—	14	8	—	5	—	—	5	—	32	10·2	—	1	1	1	—	—	2	—	—	5	1·6	79	25·2	81
City of London	27,986	—	6	6	—	19	—	—	3	—	34	15·8	—	—	—	1	—	—	—	—	—	1	0·5	47	21·9	97
East Districts.																										
Shoreditch	121,071	—	15	15	—	6	3	1	17	—	57	6·1	—	12	1	5	2	—	2	—	—	22	2·4	189	20·4	93
Bethnal Green	128,938	—	33	30	—	7	—	2	38	—	110	11·1	—	15	1	3	1	—	4	—	3	27	2·7	207	20·9	131
Whitechapel	81,391	—	9	13	—	6	—	—	8	—	36	5·8	—	7	1	1	2	—	1	—	1	13	2·1	139	22·3	99
St. George-in-the-East	48,360	—	7	5	—	4	—	—	6	—	22	5·9	—	3	—	1	1	—	2	—	—	7	1·9	88	23·6	143
Limehouse	58,807	—	9	19	—	7	—	1	10	—	46	10·2	—	2	—	1	2	—	1	—	—	6	1·3	73	16·2	110
Mile End Old Town	113,161	—	17	28	—	11	—	1	12	—	69	7·9	—	11	—	5	—	—	2	—	—	18	2·1	167	19·2	135
Poplar	170,656	—	34	31	—	20	1	—	19	—	105	8·0	—	6	1	2	5	—	—	—	1	15	1·1	256	19·6	112
South Districts.																										
St. Saviour Southwark	24,207	—	4	13	—	—	—	—	7	—	24	12·9	—	—	—	2	—	—	1	—	1	4	2·1	46	24·8	210
St. George Southwark	60,536	—	14	25	—	1	—	—	10	—	50	10·8	—	1	1	3	3	—	—	—	1	9	1·9	107	23·0	127
Newington	124,166	—	29	58	—	6	—	1	23	—	117	12·3	—	8	—	10	23	—	2	—	4	47	4·9	245	25·7	158
St. Olave Southwark	11,088	—	2	1	—	—	—	—	—	—	3	3·5	—	—	—	—	—	—	—	—	—	—	—	16	18·8	—
Bermondsey	85,835	—	39	22	—	5	—	—	6	—	72	10·9	—	2	—	7	—	—	—	—	2	11	1·7	136	20·7	151
Rotherhithe	41,050	—	19	3	—	6	—	1	6	—	35	11·1	—	—	2	—	1	—	—	—	—	3	1·0	57	18·1	117
Lambeth	306,108	—	97	9 8	—	17	1	5	27	—	245	10·4	—	—	3	10	6	—	7	—	1	27	1·1	394	16·7	104
Battersea	174,996	—	53	33	—	12	—	1	16	—	165	12·3	—	4	2	4	1	—	1	—	—	12	0·9	190	14·2	119
Wandsworth	209,655	—	131	47	—	7	—	2	24	—	211	13·1	—	—	3	7	13	—	3	—	1	27	1·7	216	13·4	81
Camberwell	284,817	—	73	65	1	9	—	—	23	—	171	8·4	—	3	3	5	12	—	—	—	4	27	1·3	312	15·4	95
Greenwich	182,513	1	120	29	—	19	—	1	30	—	200	14·3	—	1	2	2	2	—	2	—	1	10	0·7	208	14·9	99
Lewisham (excluding Penge)	91,027	—	18	25	—	7	1	2	4	—	57	8·2	—	—	—	4	—	—	1	—	3	8	1·1	96	13·8	102
Woolwich	41,542	—	28	14	—	1	—	—	1	—	44	13·8	—	—	1	2	1	—	—	—	—	4	1·3	53	16·6	71
Lee	40,219	—	27	5	—	1	—	—	1	—	34	11·0	—	—	—	1	—	—	—	—	—	1	0·3	30	9·7	42
Plumstead	64,031	—	61	24	—	2	—	—	5	—	92	18·7	—	—	2	—	2	—	—	—	—	4	0·8	64	13·0	95
Port of London	—	1	1	—	—	1	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 32 cases of membranous croup.

† Including deaths from membranous croup.

Hospital on Saturday last, Feb. 4th, was 2665, against numbers declining from 2939 to 2679 at the end of the five preceding weeks; 265 new cases were admitted during last week, against 220, 249, and 220 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 295 and 266 in the two preceding weeks, rose again last week to 348, but were 136 below the average. The causes of 70, or 1·6 per cent., of the deaths in the 33 towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Nottingham, Salford, Oldham, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Blackburn, Preston, and Halifax.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·3 and 22·1 per 1000 in the two preceding weeks, further rose to 28·4 during the week ending Feb. 4th, and exceeded by as much as 8·9 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 16·9 in Perth and 19·7 in Dundee to 32·5 in Greenock and 33·2 in Glasgow. The 866 deaths in these towns included 43 from whooping-cough, 20 from diarrhœa, 16 from measles, seven from scarlet fever, seven from diphtheria, and two from "fever." In all, 95 deaths resulted from these principal zymotic diseases, against 94 and 78 in the two preceding weeks. These 95 deaths were equal to an annual rate of 3·1 per 1000, which was 1·5 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough which had declined from 35 to 30 in the three preceding weeks, rose again to 43 last week, of which 25 occurred in Glasgow, 11 in Edinburgh, and three in Leith. The 16 deaths referred to measles exceeded by one the number in the preceding week, and included nine in Aberdeen and six in Edinburgh. The fatal cases of scarlet fever, which had been six and 14 in the two preceding weeks, declined again to seven last week, of which five occurred in Glasgow and two in Edinburgh. The deaths from diphtheria which had been nine in each of the two preceding weeks declined to seven last week, and included three in Glasgow and two in Aberdeen. The two fatal cases of "fever" were recorded in Aberdeen. The deaths referred to diseases of the respiratory organs in these towns, which had been 153 and 161 in the two preceding weeks, further rose to 282 last week, and were 165 above the number in the corresponding period of last year. The causes of 52, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 28·6 and 24·9 per 1000 in the two preceding weeks, rose again to 31·8 during the week ending Feb. 4th. During the past four weeks the death-rate in the city has averaged 28·1 per 1000, the rate during the same period being 17·6 in London and 24·2 in Edinburgh. The 213 deaths registered in Dublin during the week under notice showed an increase of 46 upon the number in the previous week, and included 10 which were referred to the principal zymotic diseases, against 10 and 11 in the two preceding weeks; of these, four resulted from diarrhœa, three from whooping-cough, two from scarlet fever, one from "fever," and not one either from small-pox, measles, or diphtheria. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rate during the same period being 1·5 in London and 4·0 in Edinburgh. The fatal cases of whooping-cough, which had increased from three to five in the three preceding weeks, declined again to three last week. The two deaths referred to scarlet fever exceeded the number recorded in any recent week; while the mortality from whooping-cough showed a marked decline from that recorded in recent weeks. The 213 deaths in Dublin last week included 40 of infants under one year of age and 65 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons considerably exceeded the numbers registered in any recent week. Eight inquest cases and five deaths from violence were registered; and 67, or nearly a third, of the deaths occurred in public institutions. The causes of 25, or nearly 12 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JANUARY, 1899.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during January in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 9·2 per 1000 of the population, estimated at 4,546,752 persons in the middle of this year. In the three preceding months the rates had been 11·5, 10·8, and 9·5 per 1000 respectively. The rates were considerably below the average in Westminster, Hampstead, St. Giles, St. Martin-in-the-Fields, Strand, and St. Olave Southwark; while they showed the largest excess in Fulham, City of London, St. Saviour Southwark, Newington, Battersea, Wandsworth, Greenwich, Woolwich, and Plumstead sanitary areas. Only two cases of small-pox were notified in London during January (one in Greenwich and one in the Port of London), and only one small-pox patient was under treatment last month in the Metropolitan Asylums Hospitals. The prevalence of scarlet fever in London showed a slight increase upon that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, Bermondsey, Rotherhithe, Wandsworth, Greenwich, Woolwich, Lee, and Plumstead. The Metropolitan Asylums Hospitals contained 2637 scarlet fever patients at the end of January, against 2977, 3090, and 2883 at the end of the three preceding months; the weekly admissions averaged 239, against 350, 288, and 239 in the three preceding months. The prevalence of diphtheria in London during January showed a slight further decline from that recorded in recent months; this disease was proportionally most prevalent in Fulham, Limehouse, St. Saviour Southwark, St. George Southwark, Newington, Battersea, and Plumstead sanitary areas. There were 1358 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of January, against 1182, 1269, and 1239 at the end of the three preceding months; the weekly admissions averaged 166, against 172 and 173 in the two preceding months. The prevalence of enteric fever in London showed a further marked decline from that recorded in the two preceding months; among the various sanitary areas this disease showed the highest proportional prevalence in St. James Westminster, Holborn, St. Luke, London City, Limehouse, Poplar, and Rotherhithe. The Metropolitan Asylums Hospitals contained 249 enteric fever patients at the end of January, against 223, 286, and 255 at the end of the three preceding months; the weekly admissions averaged 34, against 41, 45, and 36 in the three preceding months. Erysipelas was proportionally most prevalent in St. George Hanover-square, Bethnal Green, Limehouse, St. Saviour Southwark, Newington, and Greenwich sanitary areas. The 25 cases of puerperal fever notified in London during January included five in Lambeth, two in Bethnal Green, two in Wandsworth, and two in Lewisham sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, Jan. 28th, the deaths of 5946 persons belonging to London were registered, equal to an annual rate of 17·0 per 1000, against 17·3, 16·3, and 16·9 in the three preceding months. The lowest death-rates in the various sanitary areas were 9·7 in Lee, 10·1 in Hampstead, 11·1 in Stoke Newington, 13·0 in Plumstead, 13·4 in Wandsworth, 13·8 in Hackney and in Lewisham, and 14·1 in Fulham; the highest rates were 21·9 in City of London, 22·3 in Whitechapel, 23·0 in St. George Southwark, 23·6 in St. George-in-the-East, 23·8 in Holborn, 24·8 in St. Saviour Southwark, 25·2 in St. Luke, and 25·7 in Newington. During the four weeks of January 520 deaths were referred to the principal zymotic diseases in London; of these, 105 resulted from measles, 39 from scarlet fever, 125 from diphtheria, 154 from whooping-cough, 55 from enteric fever, and 42 from diarrhœa, but not one either from small-pox, typhus, or any ill-defined form of continued fever. These 520 deaths were equal to an annual rate of 1·5 per 1000, against 1·5 and 1·7 in the two preceding months. No death

from any of these zymotic diseases was recorded last month in Strand or in St. Olave Southwark; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, Westminster, Hampstead, Stoke Newington, St. Giles, City of London, and Lee; and the highest rates in Chelsea, St. Pancras, Shoreditch, Bethnal Green, Whitechapel, Mile End Old Town, St. Saviour Southwark, and Newington. The 105 fatal cases of measles were as many as 157 below the corrected average number in the corresponding periods of the 10 preceding years; this disease showed the highest proportional fatality in Clerkenwell, Shoreditch, Bethnal Green, Whitechapel, Mile End Old Town, and Newington sanitary areas. The 39 deaths referred to scarlet fever were just half the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Fulham, Rotherhithe, and Plumstead. The 125 fatal cases of diphtheria were 44 below the corrected average number; this disease showed the highest proportional fatality in Chelsea, Holborn, Shoreditch, Whitechapel, Mile End Old Town, St. Saviour Southwark, Newington, and Bermondsey sanitary areas. The 154 deaths from whooping-cough were 125 below the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Paddington, Chelsea, St. George Southwark, and Newington. The 55 fatal cases of enteric fever were 11 above the corrected average number; this disease showed the highest proportional fatality in St. James Westminster, Clerkenwell, St. Luke, Bethnal Green, and St. George-in-the-East sanitary areas. The 42 deaths from diarrhœa were 13 below the average. In conclusion, it may be stated that the aggregate mortality in London last month from these principal zymotic diseases was more than 41 per cent. below the average.

Infant mortality in London during January, measured by the proportion of deaths of children under one year of age to registered births, was equal to 112 per 1000, and was considerably below the average. Among the various sanitary areas the lowest rates of infant mortality were recorded in St. James Westminster, Stoke Newington, Newington, Clerkenwell, St. Olave Southwark, Woolwich and Lee; and the highest rates in Chelsea, St. Martin-in-the-Fields, Strand, Holborn, St. Saviour Southwark, and Newington.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced: — Staff Surgeons: E. J. Biden to the *Orlando;* W. M. Lory to the *Aurora;* E. C. Ward to the *Penguin;* and B. C. E. F. Gunn to the *Repulse.* Surgeons: E. S. Reid to the *Orlando;* E. F. Power to the *Aurora;* R. St. G. S. Bond to the *Collingwood;* G. Hewlett to the *Comus;* A. W. Campbell to the *Royal Arthur;* and T. Austen to the *Wildfire* for Sheerness Yard.

ROYAL ARMY MEDICAL CORPS.

Major R. Kirkpatrick proceeds to Fort George for duty, vice Lieutenant J. S. Gallie, who has been ordered to Maryhill. Major M. W. H. Russell is posted to the Western Heights, Dover, for duty. Captain H. J. M. Buist joins at Woolwich. Captain J. H. Rivers, in medical charge, Station Hospital, Purandhar, will, on his departure to Cairo for service with the Egyptian Army, be relieved by Lieutenant A. H. Morris.

Captain Julian P. S. Hayes to be Major and Captain Robert Caldwell to be Major. The under-mentioned Lieutenants to be Captains: Frederick S. Brereton, John C. B. Statham, Robert M. Le H. Cooper, Edwin C. Hayes, Percy J. Probyn, Anthony H. Waring, Arthur W. Hooper, William A. Ward, and Edmund G. Forrest.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Alic Phillips, the Manchester Companies, Volunteer Medical Staff Corps, to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 4th Durham (Western Division, Royal Artillery): Robert Hanton to be Surgeon-Lieutenant. 1st Midlothian: William Macrae Taylor to be Surgeon-Lieutenant. *Rifle:* 1st Volunteer Battalion the Prince of Wales's Own (West Yorkshire Regiment): Surgeon-Lieutenant A. R. Stoddart to be Surgeon-Captain. 1st Volunteer Battalion the Lancashire Fusiliers: Surgeon-Lieutenant A. P. Nuttall to be Surgeon-Captain. 4th Volunteer Battalion the Cheshire Regiment: Surgeon-Lieutenant E. J. Weightman resigns his commission. 24th Middlesex: Surgeon-Lieutenant C. R. Handfield-Jones to be Surgeon-Captain. 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment): William Norman Evans to be Surgeon-Lieutenant. 13th Middlesex (Queen's Westminster): Charles Arthur Morris to be Surgeon-Lieutenant. 2nd Volunteer Battalion, the Highland Light Infantry: Archibald Neville McLellan, to be Surgeon-Lieutenant. 9th Lanarkshire: James Craik Taylor to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Surgeon-Captain F. J. L. Warwick, from the 1st Tower Hamlets Volunteer Rifle Corps, to be Surgeon-Captain.

VOLUNTEER OFFICERS' DECORATION.

The Queen has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force:— *North-Eastern District: Rifle:* 1st Volunteer Battalion the Northumberland Fusiliers: Surgeon-Captain John Peter Elliot. 2nd Volunteer Battalion the Northumberland Fusiliers: Surgeon-Lieutenant-Colonel Hugh Frazer Hurst, retired. *Scottish District: Rifle:* 8th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Lieutenant-Colonel John Stewart Muir. *Southern District: Rifle:* 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment: Surgeon-Major Charles Knott. *Western District: Rifle:* 3rd Volunteer Battalion the Welsh Regiment: Surgeon-Lieutenant-Colonel Evan Jones.

THE FIGHTING AT MANILA.

The rapid current of events has compelled the Americans to "take up the white man's burden" and face the consequences of the obligations and responsibilities which they have incurred by their war with Spain. That the United States will manfully accept the position caused by the abolition of Spanish rule and influence does not admit of doubt, especially now that the boldness of the Filipino insurgents has by challenging the military and naval forces at Manila thrust this duty upon the American Government. From the information which has already been published it is clear that the recent fighting at Manila was of a severe character; that the American troops behaved with their accustomed gallantry; and that the insurgents were badly defeated and driven back with a very considerable loss. The fighting took place last Saturday and Sunday and was on an extended scale. After a fierce encounter the Californian Regiment drove the rebels out of their stronghold at Paco. It is estimated that the insurgent losses amounted to 4000 killed and wounded and that the casualties on the American side were about 175, of whom 40 were killed. The total American force in and around Manila amounts to 15,000 or 20,000 men. Of this number it is reported that some 2500 are in hospital suffering from typhoid fever, small-pox, dysentery, and other diseases incidental to service in that climate. It is said that many soldiers of the American Volunteer force, unused to all the discomforts of field service, are sick of the war and longing to return to their homes. Strong reinforcements are on their way from the States and although the task of reducing the insurgent native population to law and order may prove a longer and more difficult task than was anticipated there is no doubt whatever that it must and will be accomplished.

THE HEALTH OF THE NAVY.

The returns of 1897 for the total force serving afloat may be regarded on the whole as very satisfactory. The death-rate of the total force—viz., 5·23 per 1000—is 0·05 less than that of the previous year, and 1·62 below the ten years' average. It is also the lowest recorded since 1856. The invaliding rate, however, shows an increase of 1·62 per 1000 over that of 1896 and of 5·44 when compared with the average ratio for the last ten years. Four cases of yellow fever are reported from the North American and West India Station, resulting in one invaliding and in three deaths. No case of bubonic plague is returned. There has been a considerable increase in the number of cases of enteric fever on the Mediterranean Station, chiefly contributed to by an outbreak of the disease which occurred on board the *Forte* at Phalerum Bay. The ratio per 1000 of cases of primary and

constitutional syphilis shows a slight increase when compared with 1896. Contrasted with the average ratios of the last ten years there is an increase in the latter but a decrease in the former of 5·39 per 1000, and a slight decrease is also apparent in those of gonorrhœa and its sequelæ. The total force in the service afloat, corrected for time, in the year 1897, was 80,540 officers and men, of whom 47,720, or 59·25 per cent., were between the ages of 15 years and 25 years; 23,740, or 29·47 per cent., were between the ages of 25 years and 35 years; 7650, or 9·49 per cent., were between the ages of 35 years and 45 years; and 1430, or 1·77 per cent., were 45 years of age and upwards. The total number of cases of disease and injury entered on the sick-list was 72,068, which is in the ratio of 894·81 per 1000, being a decrease, compared with the previous year, of 16·26 per 1000, and of 71·32 per 1000 when compared with the average ratio of the last ten years.

THE RUSSIAN GARRISON AT PORT ARTHUR.

It is reported that information has reached the Russian War Office of the grave prevalence of sickness, attended with much mortality, among the Russo-Chinese force at Port Arthur. During November and December last, the correspondent of the *Standard* states, there were 215 deaths and the average mortality was at the time he telegraphed about four daily. The strength of the force is not, however, given and the rates of sickness and mortality cannot consequently be calculated. The bad quality of the water-supply is blamed for much of the sickness.

INFLUENZA ON THE TRAINING-SHIP "ST. VINCENT."

There has been a somewhat extensive outbreak of influenza on the training-ship *St. Vincent* at Portsmouth and a large number of boys are on the sick-list, some of whom have been sent to Haslar Hospital.

Inspector-General of Hospitals Warburton who is greatly respected and is leaving India previously to his retirement from the Indian Medical Service was recently entertained at a farewell banquet at the United Service Club, Lucknow, by the officers of the medical service of the united provinces and presented with an album containing photographs of the donors.

The following officers of the Royal Army Medical Corps have proceeded to Egypt from India for duty with the Egyptian army: Captain H. A. Bray, Captain J. H. Rivers, Lieutenant W. E. Hudleston, Lieutenant S. L. Cummins, and Lieutenant H. G. F. Stallard.

The long-talked-of swimming bath for the use of the troops at Aldershot will soon, we understand, be taken in hand. The bath will be fitted with every modern convenience and there will also be private baths, hot baths, &c.

Correspondence.

"Audi alteram partem."

INFANTILE MORTALITY AND ITS PREVENTION.

To the Editors of THE LANCET.

SIRS,—The success of the movement recently inaugurated for the prevention of consumption and other forms of tuberculosis makes one think that something might likewise be done to prevent the infantile mortality which you so truly say in your issue of Nov. 20th is "a scandal to the municipal authorities and to the State." The figures which you quote in regard to Manchester are appalling, but unfortunately they are little worse than what may be found in any of our other large towns. In Scotland in 1894 (the year for which I have figures at hand) nearly one-fourth of the total number of deaths occurred in children under one year. In Glasgow (same year) the death-rate for all ages was 2·35 per cent., while for children under one year it was 17·65 per cent. In Dundee and Aberdeen the death-rate for those of one year was even higher, being over 20 per cent. in both cities. It is needless to quote more figures for it is sufficiently evident and sufficiently well known that our country loses as many citizens by its high infantile mortality as it does by harbouring in its midst the various forms of tuberculosis.

Of course it may be urged that a high mortality during the first year of life is unavoidable and that in spite of numerous sanitary reforms the infantile mortality is just about as great to-day as it was 30 years ago. That may be true. But it is also true that the death-rate of children under one year is nearly twice as great in town districts as in rural districts and in some of the poorer-class town districts four times as great as in the better-class districts of the same town. This, at least, is found to be so in comparing the death-rate in different districts of Glasgow. The meaning of these figures, I take it, is that a high death-rate among children is not unavoidable.

What, then, is the cause of this high mortality and how is it to be prevented? It is difficult with any degree of certainty to get at its exact cause, but if you ask the opinion of any dozen medical men whose practices lie in the poor parts of the city the one reply will be "bad feeding." For some years past I have made it my custom to inquire as to the feeding of every child brought to me at the out-door department of the hospital and in most cases the wonder is that the child still lives. Parents of this class seem to give their children, even when a few months old, a share of the food which they themselves are eating and when the child is weaned the "general run of the house" seems to be the customary diet. Statistics tell the same story. Unsuitable food, we know, is the most common cause of diarrhœa in children, and diarrhœa among poor children is very frequent. This is well illustrated by comparing the deaths due to diarrhœa occurring in different districts of the same city. In Glasgow, for instance, in most of the poorer districts the death-rate of children under five years from diarrhœa is from three to four times as great as in the better-class districts.

Let us take it, then, that the chief cause of our infantile mortality is bad feeding, how is the evil to be prevented? The first step would seem to be to instruct parents as to how their children should be fed, for the ignorance even with the better class on this point is often amazing. A committee of experts should be formed to draw up a diet-table for children at various ages. These tables should be printed and disseminated among the people in every way possible. When parents register their children they should receive a diet-table and all dispensaries and medical men and, indeed, all persons visiting among the poor should be freely supplied with them. The circulation of such tables would in time bear fruit and parents would come to appreciate the fact that there is a right and a wrong way of feeding their children.

But to instruct the parents is but a preliminary measure, for many parents cannot afford the food which we tell them their children should have. It is not at all uncommon for a working man to have three children all under four years of age, and to give each of these from threepennyworth to fourpennyworth of milk in the day is quite beyond his means. For this class the only solution seems to be to give free food as we give education. And why not? Is it not more important to the State and to the individual that a child should enter life with a healthy body than that he should be able to read and write? The latter can be amended, not the former. It is doubtless a very large order to feed the children of the poor. So was free education. And is not the evil sufficiently great to demand such treatment? The evil of bad feeding does not end with a high death-rate. If that were so it would not so much matter. But of those who survive we have many growing up puny and deformed, stunted in body and in mind, and a perpetual expense to the community in which they dwell. Indeed, it seems much better to feed children as such, in their own homes, than to feed them as adults, as we do, in our unions, asylums, and prisons. The giving of free food would, of course, be very liable to abuse. That would have to be safeguarded. Parents earning a good wage would not be allowed free food for their children, and if they failed to provide suitable food they would be prosecuted under the present law or some future one more stringent.

I am, Sirs, yours faithfully,

Glasgow, Feb. 2nd, 1899. WALTER K. HUNTER.

MEDICAL ACCOMMODATION IN "TRAMP" STEAMERS.

To the Editors of THE LANCET.

SIRS,—The wish expressed in my letter to THE LANCET of Dec. 17th, 1898, that Dr. Owens would publish an account of

his single-handed operation on board the s.s. *Nineveh* which induced the owners to make the operator a suitable presentation has been speedily gratified by the communication in your journal of Jan. 7th—"Herniotomy plus Laparotomy successfully performed under Unusual and Difficult Circumstances." Dr. Owens's inventive resource and bold surgery undoubtedly saved the man's life. To the hope expressed in the opening paragraph, everyone who reads the narrative will say "Amen," while the surgical deductions that conclude the paper are practical and obvious. The true lesson, however, the kernel of the matter, is to be gleaned in the body of the paper and causes one to ask why steamers are permitted to go on these long voyages with such an imperfect outfit and such meagre and inadequate accommodation for the surgeon? The dimensions of the cabin (the operating-room and presumably the sleeping-quarters of the medical officer of the ship) are mentioned as six feet by five feet six inches. The great liner, travelling at railway speed across the Atlantic, is under Board of Trade supervision; every appliance is furnished by the company and the trusted surgeon has *carte blanche*. The trip is brief—under seven days. On the other hand, there is a class of steamers dawdling to the uttermost parts of the earth, facetiously called "tramps" by the regular liners; I do not certify this appellation to the *Nineveh*, which, I believe, is a regular voyager, but there are steamers that are subject to no surveillance save that of the owners or agents. They advertise that the ship carries a surgeon and the contract is kept in the eye of the law so far; but anyone who reads between the lines of Dr. Owens's history of the trip will discern that the whole bill is not filled, and that the necessary *addenda* to the equipment of that officer, such as fresh and pure drugs, proper instruments, with the necessary space, are sadly lacking. So long as the ship gets clearance legally, makes the voyage, and pays dividends—and these plebeian voyagers pay better than the aristocrats of the sea—precious little interest is taken in that necessary evil, the "surgeon and his fixings." I was curious to learn the cause of such unusual appreciation on the part of the owners; certainly no presentation was ever more worthily gained, but I am ungracious enough to think there is also an air of *placebo* about it. Cases are not altogether surgical at sea. Take the other side of the question. A man and his wife and children going to Australia. The man says to his wife: "You need'nt bother about medicines as there is a doctor on board and he will have all that is necessary." Alas for the medical officer and the family. The surgeon, perhaps going on board an hour before the ship is sailing, absolutely uninformed as to the instruments and drugs on which the lives of those committed to his care depend, while the passenger—well, the necessaries are sometimes not to be found and the losses that have occurred in the past through this incompleteness will not be known here. However, it is superfluous to add words further on this subject. The question still presses: Why are these steamers not subject to the searching eye of the authorities? If there be any justification for the suggestions in this letter it is to be found in a perusal of Dr. Owens's experience during his trip to Australia.

I am, Sirs, yours faithfully,

Bournemouth, Jan. 31st, 1899. R. A. CALDWELL.

POINTS IN THE WORKING OF THE WORKMEN'S COMPENSATION ACT, 1897.

To the Editors of THE LANCET.

SIRS,—The experience which I have had in the examination of accident claims during many years and of the working of the Workmen's Compensation Act, 1897, since last July enables me to endorse in every way the points in your annotation in THE LANCET of Feb. 4th. Firms and insurance offices which carry employers' indemnity risks are being shot at from every side, not only when disease complicates a *bonâ-fide* accident, but in many cases fraudulently when an alleged accident is invented to cover the result of pre-existing disease. This is notably so, as you mention in connexion with phthisis or Bright's disease, but I have often had cases of old-standing hernia, disease of the eye, and rheumatic affections which were all stated to be the result of recent accident. Of course, every effort is made to hoodwink the medical examiner and to hide from him the true history of the case.

I wish to call your attention to a matter I have not yet seen publicly noticed and to ask for your opinion in relation to it. In regard to the medical referees appointed by the Secretary of State it is set forth in the second schedule, section 13, "that a committee, arbitrator, or judge may appoint any such practitioner to report," &c., but this has become in many districts a dead letter. County-court judges, even when there is a direct conflict of medical evidence, give decisions without calling for the report of the medical referee provided by the Act. A county-court judge or other learned lay arbitrator, however learned in the law, is not able to appreciate medical evidence from the point of view of an experienced medical man. If the "may" was altered to "shall" judgments would be more in accordance with justice than they often are at present.

In conclusion, in reference to the fees of house surgeons I think that frequently a medical examination by the medical officer of an employer is incomplete and unsatisfactory unless he has before him the medical history of the case; sometimes, however, it is unnecessary, but before seeing the case it is impossible to decide whether it is necessary or not. It would be convenient if the house surgeon could always be consulted with, but the present fees demanded—£1 1*s.*, £2 2*s.*, and even £3 3*s.*—are absolutely prohibitory in claims where very small compensation is in question.

I believe it would be to the advantage of house surgeons if a small fee was the rule and I feel sure that most insurance offices and firms would willingly pay a fully satisfactory further fee when an exceptional amount of time was taken up or a written report was required. An authoritative word from you on the subject would be of great value.

I am, Sirs, yours faithfully,

ALBERT BENTHALL,
Head Office Medical Officer, Ocean Accident and Guarantee Corporation.

Cockspur-street, Pall Mall, S.W., Feb. 4th, 1899.

*** It is clear that the fees asked by house surgeons should bear some relation to the demands made upon their time and to the pecuniary importance of the case. We shall refer to the matter later.—ED. L.

"THE DISTRIBUTION AND ORIGIN OF TUBERCULOSIS IN CHILDREN."

To the Editors of THE LANCET.

SIRS,—Dr. Leonard Guthrie in his interesting and valuable paper in THE LANCET of Feb. 4th arrives at the conclusion that children most commonly become infected through the respiratory, not through the alimentary, tract. Most other pathologists who have paid attention to the question have expressed their opinion upon the point still more strongly. Thus, Dr. Comby[1] in 28 cases of tuberculosis occurring in children under the age of two years considered that infection took place through the respiratory tract in every instance; in all caseation of the mediastinal glands was present. Dr. Emmett Holt[2] in 119 necropsies found the bronchial glands affected in 108 and did not consider that infection through the intestinal tract occurred in more than 1 or 2 per cent. of the cases. Dr. Holt quotes Northrup as having in 125 necropsies on cases of tuberculosis in children found what appeared to be definite infection through the intestinal tract in only one instance, whereas there were 88 in which it was obviously through the bronchial glands. My own experience of post-mortem examinations in young children is so small as to be scarcely worth mentioning, but in 10 cases of tuberculosis in children aged two years and under there were caseous bronchial and mediastinal glands in nine; in four of these there were caseous points in the mesenteric glands also, but in one case only caseation was present in the mesenteric glands, while the bronchial glands were unaffected. Dr. Guthrie seems to doubt that the intestinal tract frequently becomes infected secondarily to the respiratory. He appears to think that extensive lesions of the lung must first be present. Caseation of the bronchial glands, however, probably not infrequently follows a bronchitis set up by tubercle bacilli. I have seen tubercle bacilli swarm in the sputum of an adult suffering from what appeared to be an ordinary attack of acute bronchitis. Dr. Guthrie also agrees with Dr. Woodhead

[1] Klinische Therapeutische Wochenschrift, 1898, 604, quoted in Pediatrics, January, 1899, p. 44.
[2] Medical News, 1896, vol. lxix., p. 656.

that caseation of the bronchial glands need not necessarily indicate infection through the respiratory tract. Cases may occur occasionally in which the infecting bacilli have arrived from a distance, but instead of there being a danger of attaching too much importance to the bronchial glands as indicating the channel of infection one would think that in many instances the primary focus of the disease when situated in them may be overlooked. Should the mediastinal glands not also be affected the bronchial glands when not specially looked for may easily escape notice. While, however, Dr. Guthrie does not express such a decided opinion as some as to the infrequency of infection by the digestive tract he is not prepared to admit that abdominal tuberculosis when present necessarily indicates that the disease has been derived from cows' milk. He suggests that milk or food may become contaminated by tubercle bacilli in the air, and to this suggestion another may be added, that the kissing of a baby by a phthisical woman may not uncommonly be a source of infection by leaving mucus containing bacilli on the child's lips. So far as I am aware it remains to be proved that the bacilli of bovine tuberculosis are virulent towards man. Dr. Emmett Holt relates an experience that seems to point in the opposite direction; 45 per cent. of the cows of a dairy, which had for several years supplied many families in a large American city were found to be tuberculous. They were killed, and an investigation was started. Of the many hundreds of children who had drunk the milk, only one was found to be tuberculous.

I am, Sirs, yours faithfully,

Clifton, Bristol, Feb. 4th, 1899. THEODORE FISHER.

"TREATMENT OF VARIOUS INFLAMMATORY PROCESSES BY THE EXTERNAL APPLICATION OF ALCOHOL."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 28th Dr. Zangger refers to the good results obtained in cases of whitlow, lymphangitis, incipient abscess, &c., by the application of alcohol. For the last seven years I have had equally good results from the use of carbolic acid (one in 60) applied on lint and covered with protective. I have particularly noticed the relief in my own case when having infected my finger while performing a post-mortem examination I was kept awake by the pain and throbbing. Carbolic acid (one in 60) applied as above and changed three times a day quickly relieved the pain, rendering the finger white and partially insensitive. Sometimes a bead of pus has formed beneath the skin; sometimes not. The carbolic acid relieves tension and limits absorption by contracting the blood and lymph vessels and at the same time acts as a local anæsthetic. I have no very high opinion of carbolic acid (one in 60) as a germicide when applied directly to an infected area, and it appears far-fetched to think that it kills bacteria through an unbroken skin surface. One word of warning. I have come across several cases (and there are a fair number on record) in which the continued application of carbolic acid to fingers has resulted in complete arrest of the circulation followed by gangrene. Patients are apt, unless warned to the contrary, to continue the application for many days and owing to the freedom from pain do not notice that anything is amiss, and the first thing noticed may be that the fingers on being incised fail to bleed, being in a state of dry gangrene. Anæmic young women are especially liable to this mishap.

I am, Sirs, yours faithfully,

Plymouth, Feb. 6th, 1899. C. HAMILTON WHITEFORD.

"AN ALCOHOL BATH FOR BURNS."

To the Editors of THE LANCET.

SIRS,—Mr. Wilfred Watkins-Pitchford's letter in THE LANCET of Feb. 4th on the suggested treatment of burns by an alcohol bath reminds me of an experiment on somewhat similar lines, though without using alcohol, I made some years ago while I was house surgeon at the Oldham Infirmary. Recognising the very unsatisfactory treatment of bad burns by ordinary methods, and having to deal with a very severe and hopeless case of burning in a little child, the greater part of her body surface having been burnt, and on account of the great pain caused by changing the extensive dressings, and, on the other hand, the great fœtor produced by leaving them unchanged, I decided to try treatment by a bath. After thinking the matter over I improvised a sort of bath by raising the edges of the large macintosh upon which the child was lying and secured them all round to the top of the railings of the child's cot, and then filled the hollow so produced with the child in the middle with carron oil (equal parts of olive oil and lime water). I chose carron oil partly on economic grounds and also because I considered it would probably be as good a dressing as any other for the purpose I had in view. The oil was kept sufficiently warm by the nurse adding a little warmed oil constantly and was changed whenever necessary by lowering the mackintosh at the foot-end of the bed and running it off. The result for the few days that the child lived was perfectly satisfactory as far as the child's comfort was concerned and the fœtor was entirely destroyed. One danger had to be guarded against and that was the danger of the child slipping down into the oil and getting drowned. This, however, was prevented by securing the head and shoulders above the level of the oil by bandages fastened to the metal work of the cot. Although I have not since had an opportunity of again trying similar treatment I feel convinced that some such treatment would be a great improvement on the usual very painful and unsatisfactory methods.

I am, Sirs, yours faithfully,

JOHN J. WEAVER.

Southport, Feb. 4th, 1899.

HUNTER *v.* CLARE: THE REAL QUESTION.

To the Editors of THE LANCET.

SIRS,—Your calm and sensible leading article on this case in THE LANCET of Jan. 28th deserves the thanks of all right-minded men in the profession. There is a deeper issue at stake than the mere right of a particular individual to style himself in a particular way. The real question is this: Is it, or is it not, desirable that a large number of the weaker and less industrious students should pass under the ægis of a non-professional body? for such the Society of Apothecaries really is, having no discipline over its Licentiates, merely the power to remove them from its roll for felony or when previously struck off the Medical Register; that they should be encouraged to take a diploma (which is not recognised as even partially equivalent by any other qualifying body and which therefore debars them to a great extent from ever rising to the higher ranks of the profession) by the inducement held out to them that it confers upon them the power to pick and choose any titles they prefer from among those accepted commonly (?), which injunction they nearly all carry out by annexing the lot (I speak from personal observation), covering their houses with multitudinous plates inscribed Doctor, Physician, Surgeon, and Accoucheur, and emblazoning their lamps with similar inscriptions, while the lack of restraint on their actions by the qualifying body permits some of them to indulge in such doubtful practices as circularising, handing of cards over chemists' counters, touting from door to door by club agents and insurance touts? Any one of the *old* L.S.A.'s can by passing an examination in *surgery* acquire the *new* Licence. Does that therefore make him a physician? We who practised on the M.R.C.S. and L.S.A. before 1886 used not to think so or so many of us would not have taken a degree or an L.R.C.P. in addition. Moreover, the L.R.C.P. is forbidden by the terms of his Licence to dispense medicine except for those who are his own patients, and therefore to keep an open surgery such as is so common in London and which is, I take it, the special prerogative of the L.S.A. The whole business has been the outcome of the very proper refusal of the College of Surgeons to combine under the provisions of the 1886 Act with a non-professional body in granting a joint licence, and no one interested in the true welfare and dignity of the profession can blame them for doing so or the General Medical Council for endorsing their own approval of that action at the time by now preventing the continuance of a grave scandal—a game of bluff on the part of the Apothecaries, the victims being the public quite as much as the other members of the profession. It is a strange thing that in the London *local* directories I have examined the letters L.S.A. never occur, while other diplomas and degrees are detailed, the words "physician and surgeon" being alone given. Is

this honest or is it a rather dishonest attempt to conceal a qualification in order to get practice?

I am, Sirs, yours faithfully,

WM. J. T. BARKER,
M.R.C.S. Eng., L.S.A., L.R.C.P. Lond., D.P.H. Camb.,
Formerly Physicians' Assistant, Bristol General Hospital.

Fulham, S.W., Feb. 6th, 1899.

"REGINA *v.* REICHARDT."

To the Editors of THE LANCET.

SIRS,—With regard to the letter of your correspondent Dr. Goodhart, as yet unchallenged and which appeared in your issue of Jan. 28th, seconding the appeal advanced by Dr. Savage on behalf of Dr. Reichardt, it would be interesting to know how Dr. Goodhart differentiates between what he pleases to call "temporary unsoundness of mind" and what is known in popular phraseology as "temporary insanity," as it might appear in a definitional sense a point which more concerns experts in etymology than experts in lunacy.

It is certain, however, that if patients are received in uncertified houses suffering from "temporary unsoundness of mind" the recipient of such patients treads perilously on the heels of the law, and it cannot therefore be a matter of surprise if one of such cases unfortunately culminates in suicide that the Commissioners should feel it their duty to test the position of the medical practitioner involved in a court of law. For this reason it might suggest itself that Dr. Reichardt having assumed a responsibility which he was not called upon to assume it would follow that the case is one that can scarcely commend itself for public commiseration, although I apprehend no member of the medical profession grudges Dr. Reichardt his verdict.

I am, Sirs, yours faithfully,

CLEMENT H. SERS.

Queen's-road, Peckham, S.E., Feb. 3rd, 1899.

THE EXPERIENCES OF A PUBLIC VACCINATOR.

To the Editors of THE LANCET.

SIRS,—In view of the fact that many public vaccinators (like myself) have their fees yet to be fixed by the Local Government Board my first month's experience in a London district may be of interest. One solitary parent made a requisition! My vaccination officer sent lists of 107 children who had attained the age of four months. Of these I vaccinated 23 only, eight were out, five gone away, 10 promised to "let me know," three declined the operation absolutely, 11 were already done, seven in two places, four in one place! I came across one family of four unvaccinated, the mother consenting to have the whole done; another family of seven whose father preferred to "brave the penalties of the law," 18 promised that their own doctors should do it, and the rest were postponed. Looking at the time occupied and the character of the business I do not feel elated at my prospects!

I am, Sirs, yours faithfully,

Feb. 8th. S. E. DISTRICT.

THE FEES DUE TO THE NON-RESIDENT MEDICAL OFFICER OF A WORKHOUSE.

To the Editors of THE LANCET.

SIRS,—I should be glad of information on the following points:—1. Is the medical officer (non-resident) of a workhouse entitled to a fee at the time of the examination of a patient by a magistrate for the purpose of making out a "detention order"? 2. In the case of the detention order being on account of insanity would the medical officer be entitled to a fee for the examination for the purpose of "certifying" the patient for removal to an asylum as well as when the preliminary detention order is made? 3. In the above what fees are usual? 4. Is a workhouse where the inmates are vaccinated by its medical officer who is not otherwise a "public vaccinator" a "vaccination district" within the meaning of the Act (Clause 4)? Does the clause of the General Orders of the Local Government Board relating to the medical officer (No. 208, 5) prevent the officer from being entitled to a minimum fee of 2*s.* 6*d.*? 5. Is the fee usually now 2*s.* 6*d.* or greater than the minimum.

I am, Sirs, yours faithfully,

Feb. 6th, 1899. WORKHOUSE.

*** Our correspondent is referred to an annotation on p. 394.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague Commission.—The Progress of the Plague.—Professor Lustig in Bombay.—Criticisms on Inoculation.

A GREAT deal of the evidence given before the Plague Commission is most uninteresting and consists of repeated accounts of the measures taken at different places for the control of the epidemic. I extract the most important particulars only. At the sitting in Agra Colonel Thomson, I.M.S., the Sanitary Commissioner, advocated that when plague broke out in a village the village should be evacuated, the people accommodated in huts, and the hamlet burnt down, and that in a small town a large block all round the focus of the disease should be evacuated, every house being thoroughly disinfected, and every hut burnt. The people should be kept in camps for at least one month. Captain White, I.M.S., said that he thought that accidental inoculation by abrasion of the surfaces of the skin or the mucous membrane was the exception rather than the rule in plague and he doubted whether abrasions were sufficient to account for the large number of femoral, inguinal, and axillary buboes amounting to about 75 per cent. of the total cases. On account of the position of the buboes one ought to look for some peripheral point of inoculation which was difficult to find. He did not think that abrasions of the skin on the hands and feet were common among the natives. Captain Elphick, I.M.S., gave a pathological account of the Jarvalapur plague cases. Of 35 cases presenting no external bubo all but one died. Of these 19 were of the pneumonic form and 15 were considered to be of the so-called septicæmic type. One had internal buboes. One only of the septicæmic type recovered. In all the cases examined post mortem there was œdema of the front chest extending to the upper arms, the sides of the chest, and the abdomen. In every case there was some enlargement of the mesenteric glands. Colonel Adams, I.M.S., thought that the outbreak in the Sirdhi State demonstrated that germs of the disease were carried to great distances in clothes. On Jan. 19th the Plague Commission took evidence at Lahore. Captain James, I.M.S., thought that in the majority of cases human agency was responsible for the outbreaks, whilst in some instances it was due to rats. These sometimes spread the disease by moving from village to village. He thought that rats coming in contact with clothes infected them. He had observed that infants in arms seemed to be immune. Out of 13 infants nursed by their plague-stricken mothers only one fell sick. The disease was milder in children than in adults. He recognised a form of the disease so mild as to permit the patients to move about. He considered the cordon a failure because the police force was not only insufficient but corrupt.

The Bombay Presidency returns for the week ending Jan. 13th show 2593 cases and 2045 deaths. Last week the figures were 2537 cases and 2048 deaths. For some weeks past there has been a steady decline, but this increase in the number of reported cases is due to the development of the recrudescence in Bombay city where the fatal cases have increased by more than 100. In Kolapur plague also has increased. There are now throughout the Presidency 360 villages affected. With regard to the value of train inspections it is to be noted that at all the railway stations where inspections are carried out only 35 cases were detected. The Madras Presidency returns show that 78 villages are infected, against 63 in the previous week. In Bangalore city and cantonment there is a great improvement. From August 12th, 1898, when plague first appeared in this Presidency, up to Jan. 13th there have been recorded 11,807 cases and 9750 deaths. Madras city continues free. In Bombay city the increased mortality is very marked. During the past week there have been 307 deaths from plague recorded, as compared with 219 for the previous week, but the total mortality has risen from 1111 to 1239—a rate per 1000 of 75·87. This is more than double the weekly mortality

(604) of the middle of November which was probably the normal death-rate for the present increased population of the city. Unfortunately there is reason to believe that by far the greater part of this excess mortality is due to plague.

Professor Lustig is going shortly to Bombay to superintend the manufacture of, and to experiment with, his curative serum. During the last outburst of plague in this city this serum was extensively tried, but the results were not particularly satisfactory and certainly not conclusive. There was a great difficulty in bringing it undamaged from Italy, so the municipality of Bombay voted a sum of money for its manufacture in Bombay. This, therefore, has been going on during the past few months and the fresh serum is now ready for use. The number of plague cases admitted to hospitals is now under the existing regulations very small, but in testing for the value of this fresh supply it is to be hoped that the cases will be taken on admission *seriatim* and not picked out as for the former experiments. Unless this is done the statistics will be almost valueless.

The advantages of inoculation are not confined to the prevention of plague, but the inoculated who get plague suffer less risks. At a plague hospital in the Mofussil there have been admitted 51 cases of plague amongst persons who had been inoculated; of these 21 had been once inoculated and 30 twice inoculated. The deaths up to date had been 19, composed of nine among the once inoculated and 10 amongst the twice inoculated. This gives a mortality of only 37 amongst the inoculated, or more particularly of 43 per cent. among the once inoculated and of 33 per cent. among the twice inoculated. These figures would be increased somewhat by any deaths among those remaining now under treatment, but as the death-rate from plague among the uninoculated and general population averages from 70 to 80 per cent. these returns show the decidedly protective effect of inoculation. Plague among inoculated persons is characterised also by much less mental disturbance. There are less delirium and less obfuscation of the mental faculties. Considerable criticism has been made of M. Haffkine's prophylactic fluid by various witnesses before the Plague Commission. Colonel Lawrie, I.M.S., says it is a putrescent organic liquid. Dr. Nield Cook of Calcutta says that he discovered sarcinæ in it and what appeared to be the bacillus mesentericus fuscus. Captain Johnson says that some samples contain cocci, others a mixture of cocci and bacilli, and that many of the organisms are distinctly pathogenic, some more virulently so than others. He goes so far as to say that the fluid as received now from Bombay is undoubtedly a putrescent organic liquid.

The migration of rats is probably a not unimportant factor in the dissemination of plague. Rats are known to migrate from one district to another when they find apparently that their numbers are being killed off by plague. They have also been observed to forsake certain houses or blocks of houses where they have apparently scented danger. It is an old observation that they have been known to run away from an impending epidemic. Rats also at normal times appear at places in large numbers unexpectedly or at places not usually frequented by them. It is stated that recently large numbers were seen crossing the causeway from the island of Bombay to the mainland.

Jan. 21st.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Royal Infirmary.

NEGOTIATIONS with the corporation for the sale of the infirmary site are going on, but there is no knowing at present what the result will be. The feeling, however, seems to be tending, much more than used to be the case, towards the sale of the whole site and the removal of the infirmary to a site in Oxford-road which has many advantages in addition to its proximity to Owens College. Such a consummation is to be wished for in the interest both of the infirmary and the city. In the meantime, as the report says, during the past year "the functions of the infirmary have been discharged with their wonted regularity"; 4533 in-patients and 33,443 out- and home-patients have been treated during the year. The income and that of the Barnes Convalescent Home at Cheadle was £25,752, a decrease of £362 on the previous year, due chiefly to diminished annual subscriptions. The expenditure at the infirmary was increased by the building of a new clinical laboratory which cost rather more than £400. At present the infirmary contains 293 beds and the Convalescent Hospital at Cheadle 136. If the infirmary is removed the difficulty of increasing the number of its beds will also be removed.

The Lunatic Hospital.

The Lunatic Hospital at Cheadle is part of the institution comprised under the name of the Manchester Royal Infirmary and is, of course, quite distinct from the Convalescent Hospital also at Cheadle. There is always great pressure on its space and the committee have recently sanctioned the enlargement of the St. Ann's Hospital in the near neighbourhood of the asylum which is devoted to epileptic cases. The committee share in the opinion often expressed by the superintendent, Mr. Mould, "that the main building of the asylum should as soon as practicable be chiefly reserved hereafter for cases requiring active treatment, those of a chronic character being suitably located elsewhere and in a separate building." In order to carry out this object additional land contiguous to the asylum property has recently been acquired. There are 350 beds in the asylum and its branches, and the cry is ever for more room.

Gas Accidents.

Two occurrences in the neighbourhood of Manchester illustrate the dangers connected with lighting and heating with gas. The first shows that gas companies should watch more closely for leakage from the mains to protect themselves from loss and the public from death. On Feb. 5th, at Stalybridge a man was found in his bedroom suffocated by gas which had escaped from a broken main. His wife and two grown-up children were found unconscious. In another house the husband was awakened by his dog scratching at the bedroom door and, as the report says, "making other noises as if in distress." The man, his wife, and baby got downstairs and found the house full of gas. The air about three houses in the street—Nos. 9, 11, and 13—was, as it was said, "pregnant with gas." Nothing had been seen of those living in No. 11, and as the police sergeant was going to knock at the door an explosion took place which blew out the windows and door and caused great destruction inside. A young man, a son, was lying on his face, apparently dead; a daughter was in bed unconscious; and the father was found lying dead on the floor. His wife was in bed and unconscious. It was thought that but for the warning given by the dog there would have been several other deaths. This brings to mind a curious instance of the effect of leakage from a gas main. A gentleman's grapes did not thrive and after a time the gardener who had done his best gave up his place. They fared no better under his successor and no one could divine the cause. But one day the owner lighted a match and threw it down when the floor of the vinery was lighted with a lambent flickering flame. The other tragedy in which three people met their death took place on the same day near Oldham. In this case they were suffocated by the fumes from a gas stove. The fireplace had been bricked up, the door was shut, and there was no outlet for the fumes. There seems room here, at all events for the good of the coming generation, for the addition of a little useful knowledge to what is already taught at board and other schools.

Manchester Port Sanitary Authority

At the monthly meeting of the Manchester Port Sanitary Authority held yesterday, Dr. Crocker, the medical officer of health, reported that he had inspected 119 vessels during the last month, of which 99 were British and 20 foreign vessels. Defective or insanitary conditions were found on 19 British and on two Norwegian ships. This does not redound to the credit of the British ships or their owners. It is satisfactory to learn that no infectious cases were reported. It was moved and carried that in accordance with the recommendations of a sub-committee, "in addition to the authorities of Manchester, Salford, and Stretford which have hitherto formed the Port Sanitary Authority, the Runcorn urban, the Runcorn rural, and the Wirral rural sanitary authorities, shall in future form such authority, and shall bear the expenses of the authority in proportion to the representation on the board." It was also resolved to recommend to the Local Government Board that in addition to this in the event of any ships coming up the canal with infectious cases on board

the authority to whose district the vessel was first destined shall pay for the maintenance and medical attendance of such patients.

Feb. 7th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Cameron Prize of the University of Edinburgh.

THE Cameron prize of the University of Edinburgh which is conferred on persons who have made valuable additions to the subject of practical therapeutics has, on the recommendation of the Faculty of Medicine, been awarded by the Senatus Academicus to Dr. Monckton Copeman of the Local Government Board, London, in recognition of his researches on the employment of glycerine for destroying pathogenic organisms in vaccine lymph.

Edinburgh Public Health Committee.

At a meeting of the Public Health Committee of the Edinburgh Town Council held on Jan. 31st it was stated that the cost of reporting cases of infectious disease for the last half year amounted to £542, representing 4339 cases.

Society of Chemical Industry.

At a meeting of the Scottish section of the Society of Chemical Industry held in Edinburgh on Jan. 31st, after the reading of papers by Mr. E. C. C. Standford on a new apparatus for the purpose of automatic infusion and by Mr. G. D. Macdougal (Dundee) on a new apparatus for the rapid analysis of milk, a discussion took place on milk-supply, in which part was taken by Dr. Tatlock, Mr. Falconer King, Dr. Marshall, Mr. L. Watson, Dr. Foulis, and Dr. Aitken. The opinions were expressed that there ought to be a standard for milk fixed by Parliament and that legislation was required dealing with the question of tuberculosis in relation to milk, to the operation of milking, and to the subsequent treatment of milk. Dr. Foulis stated that in his practice 80 per cent. of the cases of scarlet fever had been caused by infection through milk.

Students' Conference in Edinburgh.

The annual conference between members of the Students' Representative Councils of the Universities of Edinburgh, St. Andrews, Glasgow, and Aberdeen was opened on Feb. 3rd by Principal Sir William Muir in the hall of the Edinburgh University Union. Various reports were presented and motions brought forward, among these being a report by the Edinburgh International Academic Committee stating that arrangements were being made for the appointment at foreign university seats of "consuls" who would take an interest in Scottish students going abroad to pursue their studies. The conference was resumed on Feb. 4th, and among other business the question of the employment of the fifth year in medicine was discussed. It appeared that there was a tendency to employ it in attendance at lectures rather than as a year for practical work. It was also moved and carried that the councils be recommended to urge on the authorities the necessity of providing for two final examinations in medicine in the year, so that it might not be necessary for students who had failed to wait for a whole year before again entering for examination.

Glasgow Hospitals.

At the annual meeting of the qualified contributors to the Glasgow Royal Infirmary held on Jan. 30th the Lord Provost, Sir David Richmond, in moving the adoption of the report gave some information of the present position of the reconstruction scheme. He stated that though little apparent progress had been made a great deal of work had been done. The managers were determined that the new hospital should be constructed and equipped in harmony with the best ideas of the day. To realise this end much trouble had been taken and at last the sketch-plan of the internal arrangements had been approved both by the staff and the committee. It was hoped that in the course of a few weeks all the plans would be finally adjusted. The total sum subscribed was £82,000 and the committee trusted that the balance necessary to realise £100,000 would yet be collected. Later in the meeting, as previously intimated, Colonel Denny, M.P., moved the election of two ladies as directors of the infirmary in opposition to the official nominees. Mr. Faithfull Begg, M.P., supported this proposition and a somewhat lively debate ensued. On a vote the ladies were defeated by 85 votes to 26.—The report of the Royal Hospital for Sick Children was submitted to the annual meeting of the subscribers on Jan. 28th. In moving its adoption Dr. Hector C. Cameron alluded to the considerable deficit in the financial account as a matter demanding public attention. He urged that all possible economy was practised in the management of the hospital, but it must be remembered that to give the patients the full benefit of medical science demanded the same expenditure as was necessary to secure the same ends for private patients. Death would not be held at arm's length on cheap terms. Dr. Cameron also spoke in opposition to the proposal to put the hospitals on the public rates.—The Glasgow Central Dispensary has lost the services of Dr. J. B. Russell as chairman in consequence of his removal to Edinburgh. At the unanimous wish of the board Dr. Russell has consented to remain on the directorate.

Medico-Legal Appointment.

Dr. J. Glaister, F.R.S.Edin., D.P.H. Camb., Professor of Forensic Medicine in the Glasgow University, has been appointed one of the medico-legal examiners in Crown cases for the city of Glasgow in place of the late Professor Coats.

Faculty of Physicians and Surgeons, Glasgow.

Mr. J. Hogarth Pringle, M.B. Edin., F.R.C.S. Eng., has been admitted a Fellow of the Faculty.

Queen Margaret College, Glasgow.

A very sad incident has darkened the course of the session. One of the most brilliant of the medical students, Miss Grace L. Young, died last week after only a few days' illness. She had passed through her curriculum with great distinction and in the ordinary course of events would have graduated in July next. Her personal influence not less than her abilities was appreciated in all the college faculties and her early death is the cause of general grief.

Glasgow Medico-Chirurgical Society.

This society met for the eighth time on Feb. 3rd when Dr. Hinshelwood showed for Dr. McCall Anderson a typical case of Psoriasis Rupioides occurring in a girl of nine years of age. Dr. John Love showed: 1. A case of Locomotor Ataxia associated with Diabetes Mellitus. The ataxia had developed with great rapidity. There had been some improvement of late under Frankel's method of re-education of the muscle sense. 2. A case of Locomotor Ataxia with Charcot's Joint Affection very typically developed in the left knee and commencing in the right. 3. A case of Pseudo-hypertrophic Paralysis of four years' duration beginning at the age of 14 years. The case was an isolated one, there being no nervous history in any other member of the family.

Proposed Home for Phthisical Patients near Aberdeen.

The annual report of the Cottage Home for Convalescents at Newhills states that during the season of 1898 165 persons were admitted, most of whom left in greatly improved health. It is proposed to add to the cottage a wing specially constructed for the use of phthisical patients so as to admit of a limited number of cases in the early stage of the disease being treated, as far as climatic conditions will allow, on the open-air system. Such cases, as a rule, have been greatly benefited by residence at the cottage. The financial position of the institution is at present satisfactory and encouraging. Last year there was a surplus of £84 and there is also a reserve in the bank of £75.

Aberdeen Royal Infirmary and Asylum Corporation.

The annual report by the directors of the above institution shows that during 1898 there were admitted to the infirmary wards 2605 patients, while there were also 5692 out-patients, as compared with 2177 and 5557 respectively in the previous year. The deaths in medical cases numbered one in 12·1 and in surgical cases one in 25·9, as compared with one in 9·8 and one in 21·3 respectively in 1897. The curative work and nursing have been effective and satisfactory. The new ward for diseases of women is stated to be an important department and the receiving and operating rooms for eye diseases have been improved and enlarged. There were on an average 40 more patients a day than in 1897, and while the total income increased to £8963 7*s.* 11*d.* the total expenditure rose to £10,215 5*s.* 10*d.* The cost per bed which in 1897 was £51 14*s.* 5*d.* was by economy reduced in 1898 to

£47 16*s.*, being a saving of £3 18*s.* 5*d.* on each of the 196 beds occupied. At the Convalescent Hospital, Cults, near the city, 300 patients were received, as against 175 in the previous year, and the cost per patient was £1 15*s.* 5*d.* A house-to-house collection of contributions will be started in June by the Hospital Saturday Committee to aid the upkeep of the infirmary on its enlarged scale. As regards the Royal Lunatic Asylum, the number of patients on the roll, which at the beginning of 1898 was 771, rose to 840 at the close of the year, an increase of 69 compared with an increase of 35 during 1897. The interim arrangements to be made in consequence of the proposed erection of a new asylum for pauper lunatics from the city are mentioned and it is not expected that the interests of the Royal Asylum will be prejudicially affected. It is estimated that to give effect to the views of the Lunacy Commissioners the reconstruction of the main asylum will cost £40,000. The cost will be met out of the surplus income. Daviot continues a useful branch and 76 acres of agricultural land were added to the grounds in Aberdeen. The ability of the curative work is certified by the Lunacy Commissioners. The total income for 1898 was £29,482 5*s.* 9*d.* and the total expenditure was £25,376 1*s.* 2*d.* Of the surplus of £4106 4*s.* 7*d.* £2000 are allocated to the reserve and £2000 to the cost of extensions.

Feb. 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The City of Dublin Hospital.

DR. A. C. DUFFEY who has filled the office of house surgeon at the City of Dublin Hospital for the past two years was presented on Feb. 4th with a testimonial by the medical and surgical staff, the resident students and ex-students, and the nursing staff. The members of the senior staff of the hospital were all present on the occasion and, quite apart from the value of the articles in which the presentation took its shape was the fact that such an honour to a young member of the medical profession is in Dublin almost unique, which proves that Dr. A. C. Duffey has performed his duties most efficiently during his long term of office in the hospital, while rendering himself at the same time quite unusually popular with the various members of its staff.

The Professorship of Pathology at Cambridge.

Dr. J. Lorrain Smith is a candidate for the chair of Pathology at Cambridge University, vacant though Professor Kanthack's death. After being John Lucas Walker student and demonstrator of pathology in Cambridge Dr. Lorrain Smith was appointed in 1894 lecturer on pathology in Queen's College, Belfast, and in addition to that post he was selected as pathologist to the Royal Hospital, the Hospital for Sick Children, and as bacteriologist to the Corporation of Belfast. The medical faculty of Queen's College, Belfast, and the staff of the Royal Hospital in that city have forwarded to the authorities at Cambridge a very strong letter on Dr. Lorrain Smith's behalf. Although on academic and personal grounds they would very much grudge his loss to Belfast they cannot but wish him every success in his candidature for the chair of Pathology at Cambridge.

Extraordinary Rainfall in January in Belfast.

In January there were 23 days on which rain fell in Belfast and the total amount for the month was 5·38 inches which is unusually high. In the same month in 1898 there were 13 days with rain and the total rainfall was only 1·67 inches.

Health of Belfast.

The report presented at the City Council meeting on Feb. 1st shows that the health of the city was in a satisfactory condition, the annual death-rate being 22·8 from all causes, while in the corresponding part of 1898 it was 24·1. The deaths from all causes in the past month, as well as those from chest diseases, are fewer than in the preceding month, while the death-rate from zymotic disease has also decreased. Typhoid fever is steadily decreasing but scarlet fever of a mild type is prevalent in many districts of Belfast.

Irish University Education.

The public interest in the university question is increasing. It is the great topic of conversation and the papers are full of speeches and letters on the subject, and almost everyone has his own ideas as to the settlement of the difficulty. One thing is becoming more and more evident, and that is the growing feeling that the present arrangements cannot go on; and the recent action of the Senate of the Royal University is an object-lesson to the man in the street. It would appear that this body met on Feb. 2nd, and although its proceedings are supposed to be private they have become through the press public property. Lord Morris presided and The O'Connor Don moved and President Hamilton seconded a resolution declaring that the present university system of Ireland was highly unsatisfactory. To this the previous question was proposed as an amendment by Dr. Allman, F.R.S., and seconded by Professor Leitch, D.Lit. The division showed that 11 Protestants voted for the amendment, while 12 voted against, all Roman Catholics except two. Of the medical members of the Senate three voted for the amendment and one against. His Honour Judge Shaw then proposed a second amendment that, after the statement in The O'Connor Don's motion, to the effect that the present arrangements for university education in Ireland are not satisfactory, there should be added the words "and that we earnestly press upon Her Majesty's Government the necessity of providing teaching colleges in connexion with this university such as will meet the wants and wishes of the people of this country." The O'Connor Don was not prepared to accept this amendment and the upshot was that it was decided unanimously to adjourn the discussion of the matter until the next meeting of the Senate, which is usually in May. The divulging of this and other matters which should be the subject of private discussion is most prejudicial to the interests of the Royal University. United non-sectarian education is good in principle and theoretically may be the best plan for Ireland, but practically it is a complete failure in that country, and in reality it is almost non-existent, so that even those who were the most ardent supporters of non-sectarian education see that a change in educational matters is inevitable. If a Roman Catholic University is established, the question to be solved is how to provide university education for those Protestants who at present go to the Royal University. There are only two courses—one the establishment, as Mr. Balfour suggests, of a Northern University located in Belfast, and the other the plan of developing Trinity College, Dublin, making it the great Protestant University of Ireland, and affiliating with it Queen's College, Belfast, and the Magee College, Derry. This is the view approved of by the Committee of Higher Education of the Irish Presbyterian Church which met on Feb. 6th and came to the unanimous conclusion, in addition to reaffirming a previous opinion in favour of non-sectarian education, "that no solution of the question of university education in Ireland will be satisfactory or final that does not include the complete nationalising of Dublin University." From a purely arts point of view a good deal might be said in favour of this settlement of the University question in Ireland, but those who put it forward forget that there is a great medical school in Belfast—the only one in the North of Ireland—and that the medical faculty is the right arm of Queen's College, for during the last session out of 398 students 223 attended the faculty of medicine. Now, one of the special grievances that Belfast students have against the Royal University is that their school is not properly represented on the examining boards. Take as an example the M.B. Board; here there are 12 examiners and of these only two are taken from Belfast while over 50 per cent. of the candidates come from that school. Another curious anomaly is that two of the examiners are on the staff of the Richmond Hospital, and as a natural result Belfast students are attracted in this way to attend a winter or summer session in that institution in Dublin. The medical profession in the north feel that if their school were affiliated with the medical school in Trinity College, Dublin, all the evils at present existing would be perpetuated, for there would be an effort not to pit Trinity College against Queen's College, but Dublin against Belfast. But there is another important difficulty in the way. Trinity College does not want to be allied with any other college and hence on all these grounds one is compelled to see that the only practical solution of the question is the one which has been so ably and so thoroughly advocated by Mr. Balfour. It alone really holds the field.

Feb. 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Contaminated Spring Water in Paris.

SOME six years ago a movement was set on foot to increase the amount of spring water available for drinking in Paris, as there is never at any time too much of this necessity of life. Accordingly the Aire, a stream hitherto unused, was pressed into the service and its water brought into the seventeenth arrondissement by means of aqueducts and other works the cost of which mounted up to several millions of francs. The water was very pure and of excellent taste. One month ago, however, it suddenly became yellow and developed a most suspicious flavour. Upon making a microscopic and bacteriological examination it was found that a vibrio was present closely allied to the cholera bacillus. The population of the affected arrondissement naturally began to get somewhat alarmed although no epidemic has as yet broken out amongst them. The engineers of the supply have stated that they were aware of the presence of this vibrio but that it was harmless thanks to the presence of other micro-organisms which kept it in check. An inquiry is on foot and M. Brouardel who has been consulted considers that circumstances point to the infection of the springs at their source, so a searching investigation has been carried out from this point of view. This inquiry took place at Verneuil in the district where the springs rise. It is now established that these springs which were thought to be collected at their real source for the supply of drinking-water are really only fed by subterranean sheets of water of which the source is some long distance away. As a matter of fact, they are offshoots from the River Aire and not real springs—i.e., they have to do with percolations from the river water and are more or less purified by passage through the soil. After the late very dry summer the first rainfall was absorbed very quickly by the thirsty soil so that the first supply of water percolating through was somewhat impure. The most serious part of the matter is that the Aire a little above where it apparently loses the portion of its waters which goes to feed the subterranean sheets of water which supply the Paris aqueduct receives a small stream, the Iton, which runs through the town of Verneuil and thereby serves the town as a kind of sewer. Again the public wash-houses are on the bank of the Aire at about the same level and the use of fluorescine has shown that this colouring agent when put into the water of the Aire can be traced in the reputed springs which serve the town of Paris.

A Sanatorium for Tuberculous Soldiers.

The question of providing a sanatorium for soldiers attacked by tuberculosis has just come before the Chamber of Deputies. The matter has come to a head owing to the alarming and progressive increase which tuberculosis shows in the ranks of young soldiers. In 1890 there were 5·70 per 1000 soldiers discharged during their term of service on account of being tuberculous, but in 1895 the figures had reached 8·34 per 1000. For a tuberculous man to live in barracks is not only bad for himself but a source of danger to his companions. As a matter of fact when the malady reaches a certain stage of development the military surgeons send him home. Unfortunately, however, when arrived there he very seldom finds the conditions necessary for his cure. There is therefore the risk not only that the patient will get worse, but that he will also infect his family and his village. The term of military service which is obligatory upon all Frenchmen is a potent agent in the dissemination of tuberculosis throughout France just as it unhappily is in the case of syphilis. The proposed military sanatorium will allow of the immediate withdrawal of all tuberculous soldiers from their regiments and will at once put a stop to their spreading infection either in the barracks or in their own homes.

A Fraudulent Druggist.

The Paris Tribunal has just had to deal with the case of a druggist who falsified his pills and potions with an audacity which is happily uncommon. He had sold his business which apparently had realised good profits. But his successor very soon saw that by selling drugs and medicines at the same prices as his predecessor, he would soon be on the brink of ruin. He then discovered that the vendor of the business while copying all prescriptions accurately into his register, in accordance with the law, gave his customers very different preparations which, according to him, would produce the same effect as those ordered in the prescriptions, but were naturally much cheaper. At other times, when, for instance, the drug ordered had a very characteristic odour, he simply reduced the dose. He was in the habit of replacing salophen by antipyrine, glycerophosphates by ordinary phosphates, syrup of ipecacuanha by some emetic solution coloured to look like the real thing, while all mineral waters sold were manufactured in the shop. In defence he stated that some of these substitutes were made by his assistant without his knowledge, and as for others his customers had asked for them so that they might have less to pay. The tribunal awarded a heavy punishment, but allowed an appeal which will come up before the court shortly.

The Bicycle in the Treatment of Hernia.

At the meeting of the Academy of Medicine held on Jan. 31st M. Lucas Championnière read a paper by M. Loir, the director of the Pasteur Institute at Tunis, upon the treatment of hernia by means of a bicycle. M. Loir recounted the history of a patient who for four years had suffered from an inguinal hernia and who had tried various trusses without success. He tried bicycle riding, but at first because he used too high a machine the hernia slipped out under the truss. He then got a low machine and was astonished to find that the hernia became reduced when he got on. After four months his hernia had disappeared altogether. M. Loir considers this case unique, but as a matter of fact it is not so. Some ten years ago Dr. Oscar Jennings, in his work on "The Influence of the Tricycle on the Health," had noted the happy results on hernia of tricycle riding. For some time past M. Lucas Championnière has considered that the rest usually prescribed for those suffering from hernia is worse for them than muscular efforts. All workers suffer far less from a hernia than those who lead inactive lives, grow fat, suffer from cough, and get into a saddle with difficulty. M. Lucas Championnière related a case in which the use of a tricycle made two irreducible hernias quite comfortable to a patient in whom formerly they had given rise to various discomforts both local and general. Of course, to obtain a favourable result certain precautions must be observed. A rider with hernia must have his saddle low and placed far back; he must not ride too fast and must avoid hills. The use of the bicycle is an excellent way of consolidating the scar at the site of operation on a hernia and may be prescribed with advantage as soon as the patient is well enough to get about.

Feb. 8th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Malaria Commission.

THE official report of the German Commission for the Study of Malaria in Italy, under the presidency of Professor Koch, has been published in last week's number of the *Deutsche Medicinische Wochenschrift*. The Commission was directed (1) to study the so-called "febbri malariche estivo-autunnali"; (2) to ascertain the relations between Italian and tropical malaria; and (3) to study the mode of infection, especially by insects. The work of the Commission was accomplished partly in Milan and partly in Rome, where an abundant supply of cases was at its disposal. It was found that the "febbri estivoautunnali," though presenting clinical differences, were, from an etiological point of view, caused by one and the same well-characterised parasite. Recent cases showed the tertian type which in course of time became altered by the use of quinine or by natural immunity. The parasites of Italian and tropical malaria are identical, the differences alleged by Italian physicians to exist between them being based upon differences in the methods of investigation. The Commission farther ascertained that the semilunar form of the parasites was not caused by a degeneration as it contained chromatin, a certain symptom of a still existing capacity for propagation. A parasite very similar to that of the human subject was discovered in birds; it was the proteosoma which has been described recently by Major Ross, Indian Medical Service, and Major Ross's opinion as to the development of proteosoma was fully

verified. From the resemblance between the two parasites it is very likely that the parasite of malaria develops in the same way as the proteosoma. During their stay in Rome the Commissioners had ample opportunity of observing the local and seasonal conditions of malaria. The city of Rome, though situated in a malarial district, is itself almost free from the disease. The cause of this very remarkable fact is not in the air which on all sides enters the town freely from the infected Campagna, neither is it in the water which is conveyed partly in open aqueducts from those districts, nor is it in the food which for the greater part is imported from the neighbourhood. The main difference between the conditions present in Rome and the surrounding country is that the interior of the city has no vegetation and therefore no mosquitoes. In winter the number of cases of malaria in the Roman hospitals is very small; in spring some cases of tertian fever are usually met with, whilst in June the number of patients increases suddenly and enormously. The cause of the prevalence of malaria in that month is not known. Methylene blue was successfully given in some cases in Italy and also in Berlin in tropical malaria when quinine was contraindicated by the simultaneous occurrence of blackwater fever. The "ticks" by which Texas fever is conveyed in East Africa were also discovered in cattle of the Campagna affected with Texas fever.

New Chemical Products as Medicines.

At a recent meeting of the Leipsic Medical Society Professor His drew attention to some disadvantages connected with the great development of chemical industry. He said that the interests of chemical manufacturers were not always in accordance with those of the public and the medical profession, for they produce every year an enormous number of new compounds which are forthwith placed on the market as therapeutical agents and they are anxious to sell as much as possible of each of them before a better one is issued by a trade rival. There is now scarcely a day that practitioners are not importuned by advertisements and samples sent to them and nearly every one of the new drugs is accompanied by the certificates of medical men stating that it is of incomparable value in certain diseases, but if inquiries are made after the lapse of a year or two one is surprised to find that the name of the once-vaunted remedy is scarcely known to the medical profession. The great majority of new compounds are nowadays recommended before they have been sufficiently proved as to their action and even their freedom from danger, one result of which was that so strongly toxic a substance as pyrodin was used as an antirheumatic and antipyretic remedy, not less than eight physicians having published articles favourable to the use of pyrodin, a substance which, according to Professor Liebreich, the eminent pharmacologist, has an extremely deleterious action on the blood. An exhaustive examination of new drugs ought to be made before their public sale is allowed. It is a fundamental maxim that new compounds ought first to be tried on animals by experienced pharmacologists. Some of the principal manufacturing chemists have already met this requirement by appointing pharmacologists of reputation and by providing them with well-equipped laboratories. The investigations conducted by the Elberfeld Farben Fabriken might serve as an example to other manufacturing firms. It is very undesirable that such investigations should be undertaken by inexperienced persons as the medical profession might in that case perhaps be misled by a mere similitude of scientific work. Experimental pharmacology affords a means of verifying the indications for the use of a new remedy and of ascertaining its possibly toxic action, but in order to discover its therapeutic effect it is necessary at last to try it on the human subject. Not everyone, however, is justified in administering new compounds to patients. Active substances ought to be tested only in hospitals where constant observation of the patients is possible, and where medical aid is at hand in the event of toxic symptoms manifesting themselves. Professor His then explained that the action of remedies could be verified either empirically or by the statistical method or the "rational" method and that the three methods must be used together. The conditions of rational research are very much improved by the use of modern methods of precision, such as the determination of weight, temperature, and blood-pressure, as well as by skiagraphy, auscultation, percussion, &c. In this way it is possible to avoid the complication of suggestion which is an important source of error. Apparent successes in treatment were often the effect of suggestion merely, instances of this kind being the results obtained by tuberculin, by suspension in tabes dorsalis, by electricity, &c. Professor His was of opinion that much experience and knowledge, combined with the critical faculty, are essential for those who would undertake the examination of pharmacological products, and men who do not possess these qualities had better abstain from therapeutical experiments or else keep their successes secret as long as possible. In medicine it often happens that it is the *cunctator* who gains the final victory.

The German Congress of Internal Medicine.

The German Congress of Internal Medicine will be held this year outside the boundaries of the German Empire in the famous Bohemian watering place of Carlsbad, under the presidency of Professor Quinke of Kiel. The official items on the programme are: (1) The Insufficiency of the Heart Muscles (to be introduced by Professor Schrötter of Vienna and Professor Martius of Rostock); and (2) Leukæmia and Leucocytosis (to be introduced by Professor Lowitt of Innsbruck and Professor Minkowski of Strassburg). Addresses will also be delivered on the following subjects:—Diagnosis and Treatment of Aneurysms of the Aorta, by Dr. Schmidt of Frankfort; Etiology of Syphilis According to Modern Researches, by Dr. von Niessen of Wiesbaden; Experiments on the Treatment of Tetanus, by Dr. Jacob of Berlin; Pathology of Gall-stones, by Dr. Meyer of Carlsbad; Treatment of Chronic Diseases of the Heart in Young Persons, by Dr. Schott of Nauheim; Administration of Digitalis in Troubles of the Circulation, by Dr. Groedel of Nauheim. Other addresses will be delivered by Professor Nothnagel of Vienna, by Professor Naunyn of Strassburg, by Dr. Leichtenstern of Cologne, by Professor Ebstein of Göttingen, by Professor von Jaksch of Prague, &c. The congress will last from April 11th to the 14th. Medical men desiring to attend must apply to Herr von Mattoni at Carlsbad.

Feb. 6th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

"Laureomania."

THE malady is a real one—a form, indeed, of "megalomania" so pronounced and becoming so common as well-nigh to have won its way into medico-psychological classification and certainly to have come under the consideration of Parliament. The craving for academic distinction (for this is what it amounts to) can be gratified all too cheaply in Italy, which, with a population of some 31,000,000, has at least 20 universities, to say nothing of what in Germany are called "Hochschulen," like the Istituto di Studi Superiori in Florence and the Istituto Lombardo di Scienze e Lettere in Milan. Entry into the liberal professions being thus so easy other occupations in business, in manufacture, and even in the handicrafts are impoverished to the serious injury of these and to the disturbance of the social order. As to the professions themselves the prospects of a livelihood they offer to their members become yearly more desperate, such is the overcrowding of their ranks, such the pressure of competition. We have it on the authority of the Minister of Public Instruction himself that to qualify and to graduate in medicine is from first to last a matter of little over 300 Italian lire, or £12! And yet to possess a degree, to be an "avvocato" or a "medico" (otherwise "professore" in the provinces), is an object of ambition well-nigh morbid and annually ever more eagerly craved for. Signor Fusinato, a member of the Chamber of Deputies, has just handed in his "relazione" (report) on the subject and the most startling, not to say ominous, figures are put in evidence. From 1882 to 1896 there was an increase of 42 per 1000 in the number of "laureati" or graduates in one or other of the faculties. As the population in that period has augmented by 6·2 per 1000 it follows that the increase of graduates between 1882 and 1896 has been approximately seven times greater than the corresponding rise in the population. Coming to particulars, let me begin with law. This profession has 8200 posts reserved for it in the public administrations and it has 10,000 members who practise it

on their own account. There are therefore 18,200 legal graduates more or less occupied. The "waste" or loss by death or "invalidità" (being pensioned off) in this *personnel* amounts to 500 annually, while the average production of graduates between 1832 and 1896 was 1070—that is, more than double the yearly loss. Take our own profession. For medical men there are reserved in the public administrations 20,757 posts; the average yearly "waste" is 500 and the average production of graduates per annum is 928—almost, if not quite, double the number there is room for. The pharmacists fare better. For them there are 12,505 posts reserved. The annual "waste" is 313 and the production is 312. Veterinary surgeons in practice or in service are 2500. The annual "waste" is 63 and the production is 86, though it should be stated that out of 8257 communes only 1734 have hitherto provided themselves with "divisional" veterinary surgeons. Midwives (for they too are "laureate") are in practice to the number of 10,243. Their "waste" is 256 and their production is 556. But here, too, it should be said that 3338 communes have no "levatrici condotte"—that is, hired or "divisional" midwives. Engineers also graduate in excess, there being every year 300 posts open to them, while annually 356 are "laureati." Lastly come the graduates in philosophy and literature. The posts reserved for them in the public administrations are 3371; there are about 100 of these open every year and there are 175 new graduates. This excess of graduation is, as I have said, a grave evil, making itself felt in a thousand pernicious ways. As already pointed out in THE LANCET it explains the enormous number of what are conveniently called "publicists" or "affaristi" in Italy—men whose business is agitation in the press or on the platform, whose "objective" is "place," and whose activity in the State serves no useful purpose, while leaving commerce, industry, and even the humbler arts more and more shorthanded.

Feb. 4th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Victoria Branch of the British Medical Association.

THE annual meeting of the Victoria Branch of the British Medical Association was held on Dec. 21st, 1898. From the report of the Council it appeared that 12 new members had joined during the year and district branches had been formed at Ballarat and Goulburn Valley. The following were elected as office-bearers for the ensuing year: President, Mr. A. L. Kenny, M.B.; vice-president, Mr. G. A. Syme, M.S., F.R.C.S.; honorary treasurer, Mr. J. R. M. Thomson, M.B.; honorary secretary, Mr. W. Kent Hughes, M.B. Lond, M.R.C.S. Eng.; honorary librarian, Mr. Felix Meger, M.B.; editor of the *Australasian Medical Gazette*, Mr. J. W. Springthorpe, M.D. Melb., M.R.C.P. Lond. Members of Council: Mr. A. V. M. Anderson, M.D.; Mr. F. D. Bird, M.S., M.R.C.S.; Mr. F. M. Harricks, F.R.C.S.Irel.; Mr. H. F. Lawrence, M.R.C.P.Edin.; Mr. R. L. McAdam, M.D.Dub.; Mr. D. Mc.M. Officer, M.B.; Mr. M. A. O'Sullivan, L.R.C.S.Irel.; Mr. R. R. Stawell, M.D.Melb.; Mr. A. W. F. Noyes, F.R.C.S. Edin. The retiring President, Dr. R. L. McAdam, read an address in which he congratulated the branch upon a very successful year of work, signalised further by the admission of lady members. Reference was made to "patent medicines" and the necessity for taking steps to protect the community against these remedies and it was recommended that the Government should adopt the German custom of analysing these nostrums and having the result and the actual cost of each ingredient affixed to each bottle or packet. The present methods of meat- and milk-supply came in for some scathing criticism. The new "Meat Bill" was "a tardy effort to effect a much-needed reform," but "of still greater necessity was it that the milk-supply of the community should be radically improved." The treatment of tuberculosis in sanatoria was next considered and it was pointed out that while the Victorian "climate was second to none in the facilities it afforded for taking advantage of the full benefit of the open-air treatment yet there was in the colony no institution in which any attempt was made to carry it out in its completeness." It was estimated that in the comparatively small population of Victoria no less than 6000 phthisical subjects existed. The death-rate from phthisis was greater in Victoria than in any other of the Australasian colonies and it was higher than it had been. It was strongly urged that an association should be formed for the prevention and treatment of phthisis. Finally Dr. McAdam referred to the relations between the medical profession and the friendly societies and said that whether remedies against existing evils were adopted or not rested entirely with the profession. If its members presented a bold and united front they would obtain reasonable and fair treatment which was all they demanded. The meeting closed with a hearty vote of thanks to Dr. McAdam who afterwards entertained the members at supper.

Outbreak of Anthrax in Sheep.

A mob of sheep which arrived at the Melbourne saleyards from New South Wales was found by the inspector to be suffering from anthrax. The inspector's opinion was confirmed by bacteriological examination by Dr. Cherry at the Pathological Laboratory, Melbourne University. Some of the sheep of the same mob had been sold as food before the disease was discovered. Every precaution has been taken to prevent further infection.

Insanity in New South Wales.

The annual report of the Inspector-General of the Insane for New South Wales shows that the number of insane is about 4000, of whom two in three are males. 692 persons were admitted to the asylums, and the net increase in patients was 112 which was less than in previous years. The proportion of recoveries, 327 of the total number, is satisfactory, and nearly half the admissions were so far relieved as to be safely discharged to the care of friends. The cost of maintenance in asylums was at the rate of £24 per patient annually and 13 per cent. of the total cost of maintenance was contributed by the relatives of the patients. As to causation, intemperance accounted for as many cases as were due to all the other causes. The classes which gave the greatest number of patients were: unskilled labourers, 149; domestic servants, 539; and persons of no occupation, 600.

Opposition to the Children's Hospital at the Glebe, Sydney.

At a recent meeting of the Glebe Municipal Council a long discussion took place as to the desirability of allowing the Children's Hospital with its diphtheria wards to remain in so crowded a district and the following resolution was carried by six votes to two:—

That this Council is of opinion that the opening of the Diphtheria Hospital as a branch of the Children's Hospital in the Glebe is contrary to the expressed original intention when the Children's Hospital was opened; that the existence of such Diphtheria Hospital in the Glebe is a menace to the health of the inhabitants, and that the Government should be requested to immediately remove the same to some less crowded and more suitable locality.

In opposition to the motion it was pointed out that out of 145 patients taken to the hospital from all parts of Sydney and the suburbs only 25 were fatal cases, that not one of these was from the Glebe, that only one death from diphtheria occurred in the Glebe outside the hospital, and that the objections to the hospital were purely sentimental.

Food Standards in New South Wales.

The Governor in Council of New South Wales has decreed, upon the recommendation of the Board of Health, the following food standards: milk shall contain not less than 12 per cent. of natural milk solids, of which at least 3·2 parts must be genuine butter fat; butter must contain not less than 83 per cent. genuine butter fat; tea must not contain more than 8 per cent. of mineral matter, calculated on the tea dried at 100° C., of which at least 3 parts must be soluble in water, and the tea as sold must yield at least 28 per cent. of extract; vinegar should contain not less than 3 per cent. of acetic acid and not more than a one-thousandth part by weight of sulphuric acid.

Death of the Secretary of the Melbourne Hospital.

Mr. J. Williams who had been for 44 years secretary of the Melbourne Hospital and who resigned the position on Nov. 29th, 1898, owing to ill-health, died on Jan. 3rd, 1899. He was the initiator of the Hospital Sunday collections in Melbourne in the year 1873, since when the total amount collected has been £57,000.

Death of Dr. A. Mueller.

Dr. Augustus Mueller of Yackandandah died on Dec. 31st, 1898. He had practised in the district for over 40 years and was widely known as the originator of what has been called

the "strychnine cure" for snake-bite. He was born in Westphalia in 1828 and graduated M.D. at Giessen in 1854. Besides practising his profession he was a *vigneron* of some note and was also a confirmed spiritualist. At the time of his death he was engaged in writing a work on the treatment of typhoid fever.

Jan. 3rd.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board in the subjects indicated:—

FIVE YEARS' REGULATIONS.

Part I. Chemistry and Physics.—Charles F. Medlicott Abbott-Brown, King's College, London; Owen Mortimer Bartlett, St. Mary's Hospital; Leonard Bolitho Bigg, St. Bartholomew's Hospital; George Birch, London Hospital; Lawrence Twemlow Booth, University College, Liverpool; Guy Leslie Buckeridge, Oxford University and Guy's Hospital; Thomas Waycott Chaff and Stephen Estridge Crawford, St. Bartholomew's Hospital; Arthur Frederick Cole and Harold Juler Cundell, St. Mary's Hospital; John Alfred Cronkshaw, Owens College, Manchester; Percy Toplis Drabble, Firth College, Sheffield; Armin Gascoigne Vavasour Elder, St. George's Hospital; Harry Loft Evans, St. Thomas's Hospital; Robert Marshall Fickling, Birkbeck Institute; Samuel Christopher Reeve Flaxman, Middlesex Hospital; Raymond Reynolds Garrett, St. Mary's Hospital; George Francis Hardy, Guy's Hospital; John Warwick Hele, Middlesex Hospital; Martin Herzheim, St. Bartholomew's Hospital; Ludovic Hill, St. Mungo's College, Glasgow; Nelson Wood Hill, London Hospital; Lionel Swinton Hooper, St. Thomas's Hospital; Hugh Morley Huggins, St. Bartholomew's Hospital; Sydney Francis Huth, St. Mary's Hospital; Edgar Norman Jupp, Guy's Hospital; Charles Samuel Kingston and Edward Leverton-Spry, St. Bartholomew's Hospital; Frederick Boulton Lowe, Guy's Hospital; Evelyn John Hausler Luxmoore, St. Mary's Hospital; Ernest Hammond McMahon, Charing-cross Hospital; Philip Jauvrin Marett, Westminster Hospital; George Boddy Messenger, University College, Liverpool; Hugh Francis Fountain Mortimer, Birkbeck Institute; Charles William O'Brien, St. Bartholomew's Hospital; Geoffrey Owens Parsons, St. Thomas's Hospital; Herbert Wilberforce Perkins, Birkbeck Institute; Bryan Pick, St. George's Hospital; James Derham Reid, Owens College, Manchester; David Harold Richards, Guy's Hospital; Thomas Rose, Middlesex Hospital; Edward John Henry Rudge and George Meredith Sanderson, London Hospital; Harvey Llewellyn Shelton, Guy's Hospital; Aaron Hoyland Smith, Firth College, Sheffield; Robert Spears and Howard Douglas Stewart, University College, London; Joseph Harvey Kemp Sykes, Yorkshire College, Leeds, and Technical College, Bradford; Francis Thompson, London Hospital; Edward Mervyn Thomson, St. George's Hospital; Henry Strawson Turner, King's College, London; Hugh Wheelwright, St. Thomas's Hospital; George Frederick Wilson, London Hospital; and Walter Frederick Wise, Middlesex Hospital.

43 gentlemen were referred for three months.

Part II. Practical Pharmacy.—Charles Birch, Mason University College, Birmingham; Sidney Charles Henry Bent, Guy's Hospital; Harry Hendy Butcher, St. Bartholomew's Hospital; Percival Butler, Private Study; William Reginald Cazenove and Joseph Taaffe De Coteau, Guy's Hospital; Thomas Waycott Chaff and Charles Dix, St. Bartholomew's Hospital; Walter Dick, University College, London; Reginald Ambrose Facey, St. Mary's Hospital; Harold Edwards Flint and Harold Goodman, St. Bartholomew's Hospital; Francisco José Gomez, King's College, London; Philip Lansdowne Hickes, University College, Bristol, and Guy's Hospital; Ludovic Hill, St. Mungo's College, Glasgow; Ricardo Luis Jimenez, Guy's Hospital; David John Lewis and James Adrian McComb, London Hospital; Leslie Miles Morris, St. Bartholomew's Hospital; Ridley Ewart Mounsey, St. George's Hospital; Samuel Northwood, Mason University College, Birmingham; Charles Louis Claude Owen, St. Bartholomew's Hospital; Horace George Pinches, St. Thomas's Hospital; Robert John Pritchard and William Owen Roberts, Guy's Hospital; Rees William Rees, Surgeons' Hall, Edinburgh, and University College, London; Edward Arthur Sanders, King's College, London; Robert West Stephenson, University College, Liverpool; George Shorland and Edwin John Tongue, Guy's Hospital; Arthur Ernest Whitehead, Firth College, Sheffield; and Henry Chadwick Woodcock, St. Mary's Hospital.

13 gentlemen were referred for three months.

Part III. Elementary Biology.—Harold Balme, King's College, London; Henry Bardsley, University College, Liverpool; Henry Stagg Bennett and Amelius Cyril Birt, St. Thomas's Hospital; Bertram Raleigh Bickford, Charing-cross Hospital; Sidney Clement Bowle, Guy's Hospital; Charles Reginald Bradley, Birkbeck Institute; Francis Arthur Brodribb, St. Paul's School, London; Hugh Donald Cochrane, St. Thomas's Hospital; Thomas Reginald Couldrey, St. Bartholomew's Hospital; Frederick Williams Creswell, St. Mary's Hospital; Armin Gascoigne Vavasour Elder, St. George's Hospital; Harold Salter Gettings, Mason University College, Birmingham; Robert H. T. Penruddocke Harris and William Frederick Higginson, St. Mary's Hospital; Arthur Edgar Hay, King's College, London; John Warwick Hele, Middlesex Hospital; Arthur Stuart Menteith Hutchinson, and Alfred John Hopkinson Iles, St. Thomas's Hospital; Martin Herzheim and Robert Mackenzie Im Thurn, St. Bartholomew's Hospital; Marcus Antonius Johnston-Lavis, Epsom College; Seymour Whitworth Jones, St. Mary's Hospital; William Athol Desmond King, Middlesex Hospital; Colin Butterworth Lee, Owens College, Manchester; Paulin John Martin, St. Bartholomew's Hospital; Frederick James Pierce, Charing Cross Hospital; Edmund Arthur Roberts, King's College, London; James Derham Reid, Owens College, Manchester; Thomas Rose, Middlesex Hospital; George Meredith Sanderson and Samuel Smulian, London Hospital; Isaac Surtees Sheffield, Guy's Hospital; Malcolm Winfrid Shute, St. George's Hospital; George Morley Arundel Thomas, St. Mary's Hospital; Henry Strawson Turner, King's College, London; J. C. F. Dudley Vaughan, Bertram Joseph Wakley, Henry Albert Wickens West, and John Henry Marsden Whitehead, St. Thomas's Hospital; Arthur Reginald Wade, St. Bartholomew's Hospital; Salomon James Weinberg, Owens College, Manchester; Vernon Northwood Whitamore, Charing-cross Hospital; and Edwards Barton Cartwright White, London Hospital.

22 gentlemen were referred for three months.

FOUR YEARS' REGULATIONS.

Part II. Materia Medica.—Alexander Vigors Benson, London Hospital; George Minter Brown, Guy's Hospital; Augustus Charles Jenkins, London Hospital; Louis Charles Martin, Guy's Hospital; Peter Herbert Scholberg, Cambridge University and St. Bartholomew's Hospital; and William Peach Taylor, Firth College, Sheffield.

One gentleman was referred for three months.

Part III. Elementary Physiology.—James John Anning and James Ewing, Yorkshire College, Leeds.

UNIVERSITY OF LONDON.—The following candidates at the Intermediate Examination in Medicine held in January were successful:—

ENTIRE EXAMINATION.

First Division.—Archibald Douglas Hamilton, University College, Liverpool; Henry Walter James, University College, Cardiff, and St. Bartholomew's Hospital; and Philip Savill, University College.

Second Division.—Henry Martyn Brown, St. Mary's Hospital; Janet Mary Campbell, London School of Medicine for Women; Cecil Edwin Chriswick Child, Charing-cross Hospital, and Birkbeck Institute; Edward Murray Clarke, University College, Cardiff; Olive Claydon, London School of Medicine for Women; George Thomas Collins, Guy's Hospital; Lucian Arnold B. DeZilwa, B.Sc., University College; Henry Bertram Foster, Guy's Hospital; Lionel Capper Johnson, University College, Liverpool, and Owens College; Henry Crewe Keates, Guy's Hospital; Charles Ernest Lakin, Middlesex Hospital; Richard Ernest Lloyd, B.Sc., University College; Herbert Love, St. Bartholomew's Hospital; Frederick James Alexander Mayes, and John Sherwood New, University College; John Elliott Sparks, University College, Bristol; Louisa Spicer, London School of Medicine for Women; Albert Edward Thomas, St. Bartholomew's Hospital; and Vivian Francis Wall, St. Mary's Hospital.

The names of the other successful candidates, as well as of those who have passed the Preliminary Scientific Examination will be published next week.

UNIVERSITY OF CAMBRIDGE.—A Cambridge University Association has been formed for the purpose of enlarging the resources of the University, and, as we announced last week, the Chancellor, His Grace the Duke of Devonshire, is its President. In addition to a gift of £10,000 from the Chancellor and a like gift from Lord Rothschild's firm, benefactions amounting to over £30,000 have already been promised for specific objects. This includes the sum promised by the Drapers' Company for the establishment of a department of agricultural science. The following Bachelors of Arts were on Feb. 2nd admitted to the degrees of Bachelor of Medicine and Bachelor of Surgery: F. H. Maturin, Gonville and Caius; G. E. Harthan, Jesus; A. E. Harrisson, Magdalene; and P. T. Sutcliffe and H. C. Thorp, Emmanuel.—A notice has been issued by the Special Board for Medicine giving a new schedule for the examination in Pharmaceutical Chemistry which forms part of the Second Examination for the degree of Bachelor of Medicine. This Schedule will come into force on the first day of October, 1899.

The examination will be practical and the questions set will have reference to—

(1) The chemical principles involved in the preparation of the following substances: reduced iron, mercury with chalk, lithium citrate, potassium iodide, mercurous chloride, mercuric chloride, calcium hypophosphite, arsenical (Fowler's) solution, hydrochloric solution of arsenic, sulphurated lime, iron phosphate, strong solution of ferric chloride, bismuth oxynitrate, strong solution of lead subacetate, tartarated antimony, iron and ammonium citrate, ammoniated mercury.

(2) The chemical relations characteristic of the following substances: solution of trinitrin, amyl nitrite, chloral hydrate, iodoform, hydrocyanic acid; the alkaloids atropine, brucine, codeine, morphine, quinine, strychnine, and caffeine; phenol, beta-naphthol, salicylic acid, salol; gallic acid, the tannins of galls and catechu; salicin; acetanilide, phenacetin, phenazone.

(3) The chemical incompatibilities of drugs as illustrated by the interaction of iron salts with arsenical solutions, alkalies with mercurial preparations, acids with sulphurated lime, acids and oxidising agents with potassium iodide, and astringent solutions with alkaloids.

(4) The estimation by volumetric methods of arsenic and antimony in given solutions of chlorine in chlorinated lime, of hydrocyanic acid in cherry-laurel water and other solutions, of iron in reduced iron and iron phosphate, of nitrites in solution of ethyl nitrite and spirit of

nitrous ether, and of citric and tartaric acid in given solutions; standardised solutions being provided.

(5) The characters of the foregoing substances and the physical and chemical tests for them and for their usual impurities.

FOREIGN UNIVERSITY INTELLIGENCE. — *Bonn:* Dr. H. Schroeder has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Brussels:* Dr. Albert Crickx has been appointed *Professeur agrégé.*—*Innsbruck:* Dr. Alois Lode has been appointed Extraordinary Professor of Hygiene.—*Lausanne:* Dr. Combo, *privat-docent* of Pædiatry, has been promoted to an Extraordinary Professorship. — *Marburg:* Dr. Eugen Enderlen has been recognised as *privat-docent* in Surgery. — *Munich:* Dr. J. N. Oeller has been appointed Extraordinary Professor of Ophthalmology.—*Naples:* Dr. R. Caporali has been recognised as *privat-docent* of Medical Pathology, Dr. Fr. Candia as *privat-docent* of Gynæcology, and Dr. G. Jacontini as *privat-docent* of Medical Pathology.—*Pavia:* Dr. Bernardino Silva has been promoted to the Ordinary Professorship of Medical Pathology. Dr. Scipione Riva Rocci of Turin has been recognised as *privat-docent* of Medical Pathology.—*Prague:* Dr. Eduard Nessel has been appointed Extraordinary Professor of Odontology.—*Utrecht:* Dr. Snellen is about to retire from the chair of Ophthalmology.

PRESENTATION TO A MEDICAL MAN.—Mr. A. H. Cook, M.B., L.R.C.P. Lond., M.R.C.S. Eng., of Roslyn-hill, Hampstead, who has recently resigned the post of medical officer at the Hampstead Workhouse after 16 years' service, was the recipient on Jan. 28th of a handsome testimonial from his late colleagues.

BATH EYE INFIRMARY.—The annual meeting of governors and others interested in this institution was held on Jan. 30th under the presidency of Mr. H. D. Skrine. The report showed that 208 in-patients had been admitted during the past year, against 262 in 1897. Financially there was a good balance in hand and £245, the amount of legacies received, had been carried to capital account.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.—The fifty-ninth annual meeting of the subscribers of the South Devon and East Cornwall Hospital was held on Feb. 3rd under the presidency of the Earl of Mount-Edgcumbe. The report stated that 1313 in-patients had been admitted during 1898, being 40 in excess of the previous year. The out-patients treated were 2336 in number, against 2445 in 1897, and 222 patients were sent to the convalescent home at Pearn which is in connexion with the hospital. The financial statement showed that the expenditure for the year was £6509 and that there was an unfavourable balance of £416.

BATH ROYAL UNITED HOSPITAL.—The annual meeting of the governors and others interested in this institution was held at the Guildhall, Bath, on Jan. 30th, under the presidency of the mayor. The report stated that during the year 1190 in-patients had been treated, against 1264 in 1897, a decrease of 74. The out-patients numbered 8209, being 779 less than in the preceding year. During the past year the new chapel and kitchens had been constructed and the operation theatre refurnished. The financial statement showed a falling-off in subscriptions and donations but an increase in subscriptions from factories and workshops.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. August Socin, Extraordinary Professor of Surgery in the University of Basle. He was born at Vevey in 1837 and studied at Basle and Würzburg. During the Franco-German War he was in charge of the Ambulance Hospital at Carlsruhe and subsequently published in conjunction with Professor E. Klebs a work on the surgical cases which he had seen. His chief subsequent publications related to the surgery of the urinary organs and especially to that of the prostate. He was one of the editors of the *Beiträge zur Chirurgie.*—Dr. Giampaolo Vlacovich, Professor of Anatomy in the University of Padua.—Dr. Karl Claus, Professor of Zoology and Comparative Anatomy in the Philosophical Faculty of the University of Vienna.—Dr. Konstantinos Busakis, Professor of Physiology in the University of Athens.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Opening of the Session.

THE session of Parliament was opened by Royal Commission on Tuesday, Feb. 7th, the session being the fifth of the present Parliament. As usual the Queen's Speech, with which the session opened, referred to the legislation proposed to be introduced by the Government. Twelve Bills were mentioned, four of them in separate paragraphs and the other eight in what is known as an omnibus paragraph. Of the former the only one that need be noted here is a measure for the establishment of a board for the administration of primary, secondary, and technical education in England and Wales, and of the latter a Bill for providing a more complete distribution of water-supply in cases of emergency in London and a Bill for the prevention of the adulteration of articles of food. Medical men will be disappointed to learn that the Speech made no reference whatever to the subject of revaccination and that neither the Marquis of Salisbury nor Mr. Balfour mentioned it in their speeches in the Debate on the Address. In connexion with India, the Queen's Speech said that the plague in that country still continues and though it has diminished in some districts previously affected it has spread to fresh places in Southern and Northern India; and the remark was added that unremitting efforts continue to be made to relieve sufferers from the disease, to check its spread in India, and to prevent its transmission to other lands.

The Vaccination Question.

Mr. BARTLEY has given notice that he will move for the preparation and issue of a return showing the number of persons who from the passing of the Vaccination Act of last year up to Dec. 31st have under Section 2 of the Act satisfied two justices or a stipendiary or metropolitan police magistrate in petty sessions that they conscientiously believe that vaccination would be prejudicial to the health of their children, the return to distinguish between Parliamentary boroughs and divisions of counties.

The Flash Point of Petroleum Oil.

Mr. URE, one of the members of the Select Committee on Petroleum, intends during the debate on the Address to ask the House of Commons to adopt an amendment expressing regret that no reference is made in the Queen's Speech to any measure of legislation designed to give effect to the recommendation of the Select Committee that legislative restrictions should be placed on all petroleum oil which has a flash point under 100° F.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ANNETT, H. E., M.B., Ch.B. Vict., D.P.H., has been appointed Demonstrator of Tropical Pathology in the newly-founded School of Tropical Diseases in Liverpool.

BERRY, H. POOLE, M.B. Lond., M.R.C.S. Eng., has been re-appointed Medical Officer of Health to the Grantham Urban Sanitary District.

BYERS, J. W., M.A., M.D., M.A.O. (Hon. Causa) Professor, has been appointed Examiner in Midwifery to the Royal University of Ireland for one year.

COLE, J. M. COATES, M.R.C.S., has been appointed Clinical Assistant to the Chelsea Hospital for Women, Fulham-road, London, S.W.

COLLINS, W. J., M.S., M.D., B.Sc. Lond., F.R.C.S. Eng., ex-Chairman of the London County Council, has been appointed by the President of the Board of Agriculture to represent the Council on a Departmental Committee to inquire into the Diseases of Animals Act.

DIMMOCK, A. F., M.D. Durh., M.R.C.S. Eng., has been re-appointed Medical Officer to the Harrogate Cottage Hospital.

FOWLER, G., D.P.H. Eng., has been appointed Resident Medical Officer to the Finsbury Dispensary, vice J. A. O. Briggs, resigned.

HEATH, A., F.R.C.S. Eng., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer for the Sparham Sanitary District of the Mitford and Launditch Union.

KEVIN, BYRNE P., M.D., B.S., B.A., M.R.C.S., L.R.C.P. has been appointed Medical Officer to the Christ Church District of the Parish of St. Marylebone, London, vice Norman Kerr, resigned.

KIRBY, S. J. J., M.D. Brux., L.R.C.P. Edin., M.R.C.S. Eng., has been appointed Medical Officer for the Frissingfield Sanitary District of the Hoxne Union.

LEY, J. W., F.R.C.S. Eng., has been appointed Medical Officer for the Newton Abbot Cottage Hospital, District and Workhouse, vice J. Culross, resigned.

MAYSTON, R. W., M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Physician to the Seamen's Hospital (*Dreadnought*), Greenwich.

MORRISON, A. C., M.B., C.M. Glasg., has been appointed Medical Officer for the Larkhall District by the Dalserf Parish Council.

OZANNE, F. N., L.R.C.P. Lond., M.R.C.S. Eng., has been re-appointed Medical Officer to the Harrogate Cottage Hospital.

PRONGER, C. E., F.R.C.S. Eng., L.R.C.P. Lond., has been re-appointed Medical Officer to the Harrogate Cottage Hospital.

RICHMOND, S., M.D. Edin., M.R.C.S. Eng., has been appointed Medical Officer of Health by the Dartford Rural District Council.

ROSE, HORACE, L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon-in-Ordinary to the Royal Bucks Hospital, Aylesbury.

SHAW, J., M.D. Glasg., D.P.H., has been appointed Medical Officer for the Seventh Sanitary District of the Aylesbury Union.

THOMSON, J. W., M.B., Ch.M. Aberd., has been appointed Senior House Surgeon to the Clayton Hospital and Wakefield General Dispensary.

WEST, WALDEMAR S., M.A., M.D., B.C. Cantab., has been appointed Surgeon to the Royal Buckinghamshire Hospital, Aylesbury.

WILLIAMS, N., M.B. Cantab., M.R.C.S., has been re-appointed Medical Officer to the Harrogate Cottage Hospital.

WOOD, RICHARD, M.D. St. And., M.R.C.S. Eng., has been re-appointed Medical Officer of Health by the Driffield Urban and Rural District Councils.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL ROYAL INFIRMARY.—Resident Obstetric Officer, for one year. Salary £40 per annum, with board, lodging, and washing.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY, Wakefield.—Junior House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

COLONIAL OFFICE, London.—Medical Officers for temporary service on the Gold Coast, for one year. Unmarried. Salary at the rate of £350 a year, with quarters, or an allowance in lieu thereof. Also Medical Officers for the West African Frontier Force on the Niger. Apply personally to the Assistant Private Secretary at the Colonial Office.

COUNTY HOSPITAL, RYDE.—House Surgeon. Salary £50 per annum, with board, lodging, &c.

COUNTY OF LANARK.—Assistant Medical Officer of Health. Salary, commencing at £130 per annum, is paid by the County Council. Applications to Dr. Wilson, County Medical Officer, Hamilton, N.B.

DALRYMPLE HOME FOR INEBRIATES, Rickmansworth. — Resident Medical Superintendent, married. Salary £200 per annum, unfurnished house, food, coals, gas, &c., provided.

DEVIZES URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £50 per annum. Applications to the Town Clerk, Town Clerk's Offices, Devizes.

FARRINGDON GENERAL DISPENSARY, 17, Bartlett's-buildings, Holborn-circus, London.—Resident Medical Officer. Salary £100 per annum, with apartments and attendance.

GENERAL HOSPITAL, Birmingham.—House Physician, for one year. Salary £70 per annum, with residence, board, and washing.

HEREFORD GENERAL INFIRMARY.—Assistant House Surgeon and Dispenser for two years; unmarried. Salary £75 per annum, with board, residence, and washing.

HERTFORDSHIRE COUNTY ASYLUM, Hill End, St. Albans.—Assistant Medical Officer, unmarried. Salary £130 per annum for the first year, rising to £150 per annum after one year's service, with furnished quarters, board, washing, and attendance.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon to Out-patients for six months. Salary 25 guineas.

KENT COUNTY LUNATIC ASYLUM, Barming Heath, near Maidstone.—Fourth Assistant Medical Officer and Pathologist for two years; unmarried. Salary £175 per annum, rising £5 a year, with furnished quarters, attendance, coal, gas, garden produce, and washing. Applications to the Superintendent, Barming Heath Asylum, Maidstone.

LIVERPOOL SCHOOL OF TROPICAL DISEASES IN CONNEXION WITH UNIVERSITY COLLEGE, LIVERPOOL, AND THE LIVERPOOL ROYAL SOUTHERN HOSPITAL.—Lecturer in Tropical Diseases. Salary £250 a year and proportion of students' fees, with the right of private practice, will be granted. Applications to Professor Boyce, University College, Liverpool.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £50 per annum, with board, attendance, and washing.

NORFOLK AND NORWICH HOSPITAL, Norwich.—House Surgeon for two years, unmarried. Salary £80 per annum, with board, lodging, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Board, lodging, and washing provided.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, E.C. Physician.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Resident House Surgeon. Salary £80, with board, residence, and laundry. Also Assistant House Surgeon. Salary £30, with board, residence, and laundry.

SALFORD ROYAL HOSPITAL.—House Surgeon for twelve months. Salary £100 per annum, with board and residence.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Honorarium of £10 will be given at the end of each six months if found satisfactory. Board, lodging, and washing provided.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London.—House Surgeon. Salary £50 per annum, with board and lodging.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—Assistant House Surgeon. Salary £30 per annum, with board, lodging, and washing.

TAUNTON AND SOMERSET HOSPITAL, Taunton. — Assistant House Surgeon, for six months. Board, lodging in the hospital, and washing provided.

UNIVERSITY COLLEGE, Sheffield.—Demonstrator in the Bacteriology Laboratory. Salary £150.

UNIVERSITY OF GLASGOW.—Chair of Pathology. The normal salary of the Chair is fixed by Ordinance at £1100.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—House Physician, for six months. An honorarium at the rate of £50 per annum given, and board and lodging in the hospital provided.

WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL, Wolverhampton.—Assistant House Surgeon, for six months. An honorarium at the rate of £50 per annum given at the end of that term. Board, lodging, and washing provided.

Births, Marriages, and Deaths.

BIRTHS.

ADAMS.—On Feb. 2nd, at Gipsy-road, West Norwood, the wife of C. E. Adams, M.R.C.S., of a son (stillborn).

CLARK.—On Feb. 1st, at Norton-road, Hove, the wife of Arthur D. Clark, L.R.C.P. and S., of a daughter.

CROOKE.—On Jan. 23rd, at Westbourne, King-street, Egremont, Cheshire, the wife of William Crooke, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

CUNNINGTON.—On Feb. 5th, at West-end-lane, N.W., the wife of C. W. Cunnington, M.R.C.S., of a daughter.

EVANS.—On Feb. 1st, at Littleport, Cambs, the wife of Harold W. Evans, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

GILLBARD.—On Jan. 28th, at Falkland, Brighton-road, Sutton, Surrey, the wife of R. Gillbard, M.R.C.S., L.R.C.P., of twin sons.

LEES.—On Feb. 4th, at Somersham, Hunts, the wife of Charles Archibald Lees, M.R.C.S., L.R.C.P., of a son.

NASH.—On Feb. 5th, at Clavering House, Bedford, the wife of W. Gifford Nash, F.R.C.S., of a son.

OSBORN.—On Feb. 7th, at the Chalet, Dover, the wife of Arthur Osborn, M.R.C.S. and L.R.C.P., of a daughter.

MARRIAGES.

COCKING—BIRKS.—On Feb. 9th, at the Parish Church, Sheffield, by Rev. James Henry, F.R.G.S., Vicar of St. Bartholomew's, Birmingham, brother-in-law of the bride, assisted by Rev. W. Bracewell, M.A., Curate of the Parish Church, Wm. Tustiug Cocking, M.D. Lond., to Alice Mary, youngest daughter of Edward Birks, Birchcliffe, Broomhall Park, Sheffield.

COOPER—KNAPP.—On Feb. 4th, at St. Mary's, The Boltons, Ernest Frederic Cooper, F.R.C.S., to Mabel Rosamund, third daughter of George Wyatville Wynford Knapp, formerly of 63rd (Manchester) Regiment.

DARLING—SMAILL.—On Feb. 8th, at St. John's Free Church, Edinburgh, by the Rev. George Philip, D.D., Thomas Brown Darling, M.D., The Hawthorns, Merchiston-place, Edinburgh, to Elizabeth Dunlop, second surviving daughter of the late George Barclay, merchant, and widow of W. R. Smaill, Edinburgh.

KERR—BLYTHMAN.—On Jan. 31st, at All Saints' Church, Wath-on-Dearne, by the Rev. Arthur Blythman, rector of Shenington, Banbury (uncle of the bride), assisted by the Rev. W. Y. Peacey, Vicar of Swinton, Dr. W. S. Kerr, of Sheffield, to Edith Mary, eldest daughter of Dr. C. S. Blythman, of Swinton, near Rotherham.

LOCKYER—COOMBS.—At Trinity Church, Clifton, Bristol, Cuthbert Lockyer, M.D., B.S. Lond., M.R.C.P. Lond., F.R.C.S. Eng., 20, Devonshire-street, Harley-street, W., to Minnie Marie Coombs, only daughter of Robert Coombs, Esq., Cote Grange, Westbury-on-Trym, Gloucestershire. "At Home," Imperial Hotel, Clifton Feb. 7th, 1899.

DEATHS.

HALL.—On Feb. 4th, at Albion-street, Lewes, Frank Algernon Hall M.R.C.S., in his 52nd year.

ILES.—On Jan. 31st, at his residence, The Retreat, Fairford Daniel Iles, M.R.C.S., aged 57.

KNIGHT.—On Jan. 27th, at The Parsonage, Rainham, Kent, John Sladen Knight, M.D., M.R.C.P., aged 78.

MACAULAY.—On Feb. 4th, at Ashfield, Halifax, Madge, the dearly beloved wife of D. J. Macaulay, M.D. Brux., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg.

MORRISON.—On Feb. 1st, at St. Mary's Hospital, London, Henry Morrison, Surgeon, of Hounslow, Middlesex, aged 76.

TURNER.—On Feb. 2nd, at South-street, Greenwich, Reuben Turner, L.R.C.P., L.R.C.S. Irel., aged 44 years.

WALKER.—On Feb. 1st, at Newton Heath, Manchester, Alexander Walker, M.D., aged 49 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat (2 P.M.).

TUESDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (15th).—St. Bartholomew's (1.30 P.M.), University College, (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (16th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (18th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (13th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Mr. W. Cheyne: Two Cases of Operation for Coxa Vara.—Dr. R. Maguire: (1) Case of Recovery from Operation for Cerebellar Abscess; (2) Case of Hysterical Spasm.—Dr. StC. Thomson: Case of Pharyngomycosis Leptothricia in a man aged 38 years.—Dr. H. Mackenzie: (1) Case of Grave's Disease in a Male; (2) Case of Large Thoracic Aneurysm.—Mr. F. C. Wallis: Case of Simple Comminuted Fracture after Operation.—Mr. W. Low: Case of Dislocation of the Humerus with Fracture of the Great Tuberosity.—Dr. W. Ewart and Mr. R. Emmett: Case of Hepatic Cirrhosis with Chronic Jaundice and Splenomegaly in a Lad the subject of Congenital Syphilis.—Dr. S. West: Case of Acromegaly.

TUESDAY (14th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. F. W. Hewitt: On the Effects produced in the Human Subject by the Administration of Definite Mixtures of Nitrous Oxide and Air, and of Nitrous Oxide and Oxygen.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M. Prof. J. R. Green: Adverse Conditions and their Remedies in the Life of Plants.

WEDNESDAY (15th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—7.30 P.M. Mr. J. Rheinberg: Exhibition of Objects shown by Multiple Colour Illumination. 8 P.M. Meeting.

NORTH-WEST LONDON CLINICAL SOCIETY (North-West London Hospital).—8.30 P.M. Discussion on the Relation of Gout to Rheumatoid Arthritis. (Opened by Dr. W. Ewart.)

SOCIETY OF ARTS.—8 P.M. Rev. J. M. Bacon: The Balloon as an Instrument of Scientific Research.

ROYAL METEOROLOGICAL SOCIETY (Institution of Civil Engineers, Gt. George-street, Westminster, S.W.).—7.30 P.M. Ordinary Meeting. Papers:—Mr. E. Mawley: Report on the Phenological Observations for 1898.—Prof. W. M. Davis: The Circulation of the Atmosphere.

THURSDAY (16th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road).—8.30 P.M. Dr. A. Whitfield: Varieties of Eczema and their Treatment.

FRIDAY (17th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Meeting.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Papers and Communications by Dr. Flux, Mr. B. Gardner, Mr. T. G. A. Burns, Mr. McCardie, Mr. H. Hilliard, Mr. A. Granville.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (13th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. S. Paget: Demonstration of Methods of Examining the Ear and of Aural Instruments.

TUESDAY (14th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Sir W. MacCormac: Hunterian Oration.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-st., W.).—4 P.M. Dr. H. Campbell: Cases of Facial Paralysis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. Tooth: Cranial Nerves (lantern demonstration).

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Prof. E. Ray Lankester: The Morphology of the Mollusca.

WEDNESDAY (15th).—EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. A. H. Tubby: Clinical Demonstration on Surgical Cases. (Post-Graduate Course).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Kidd: Pleurisy.

THURSDAY (16th).—CHARING-CROSS HOSPITAL.—4 P.M. Dr. Green: Cases in the Wards. (Post-Graduate Class.)

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.—4 P.M. Dr. Voelcker: Demonstration of Selected Cases.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. S. Paget: Demonstration of Methods of Examining the Ear and of Aural Instruments.

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Dr. A. Macfadyen: Toxins and Antitoxins.

SATURDAY (18th).—ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Right Hon. Lord Rayleigh: The Mechanical Properties of Bodies.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1898, which was completed with the issue of Dec. 31st, and the Title-page to the Volume, were given in THE LANCET of Jan. 7th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 6*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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THE SLOCUM METHODS.

The *New York World* is not a nice paper. It is one of the papers whose recent developments far exceed in vulgarity and stupidity anything that Dickens ever imagined in his portraits of Mr. Jefferson Brick and that warlike person's employers; and not so long ago, we learn from the current issue of "Sell's Dictionary of the World's Press," it was excluded from the Century Club of New York, as well as from the files of certain public libraries. The following effusion is printed in the New Year's day edition of this paper, and we reproduce it because it forms a good example of the way in which an unscrupulous management can prostitute a paper. Of course the article is an advertisement, but it is printed as though it were editorial matter, so that all connected with the issue of the paper are damaged in their reputation for truth and decency, for the thing has the appearance of being written by any of them upon editorial instruction.

WALES' PHYSICIAN ON CONSUMPTION.

Sir William Broadbent says Consumption is Contagious and Curable—Not Hereditary.

AGREES WITH SLOCUM METHODS.

At a Meeting in London the Prince of Wales' Physician Fully Confirms Dr. Slocum's Teachings on This Disease.

LONDON, Dec. 31st.—A meeting of the National Society for the Prevention of Consumption and Other Forms of Tuberculosis held at Marlborough House, Dec. 20, was presided over by the Prince of Wales and addressed by Lord Salisbury and Sir William Broadbent, Physician to the Prince of Wales.

Dr. Broadbent adheres to the view that consumption is not a hereditary but a contagious disease, and is therefore curable by a treatment which will destroy the germs and build up the system.

He thus agrees with Dr. Slocum in every particular and his address is a practical indorsement of the system of treatment followed out so successfully by this well-known American practitioner.

Dr. Slocum felt sure, when he first announced his theory, based on scientific experiments and practice, that consumption is a germ disease and not a hereditary taint, that the whole medical world would in time acknowledge that he was right.

In Sir William Broadbent Dr. Slocum has an ally who will be of great assistance in teaching the people the real nature of consumption, its prevention and its cure.

The first thing necessary, as these two great physicians show, is the killing of the germs of the disease and then the strengthening and building up of the system.

This is just the system upon which the Dr. Slocum New Treatment for Consumption, Lung Weakness, and the Grip is based. The germs of consumption, grip, &c.

The article ends by recommending any one suffering from a wasting chronic complaint to call at the Doctor Slocum Laboratories, 98, Pine-street, New York. We have recently had in our articles upon "Quacks and Abortion" to comment very severely upon the laxity which allowed the management of many English journals to accept the dirty money of the persons who advertise remedies for "Female Obstructions of Whatever Kind," but at any rate these things were frankly advertisements. The claims as to the efficacy of the nostrums were made by the proprietors of the recipes and bore no appearance of being put forward editorially. Here, in the specimen of advertisement which we have given, the influence of the *New York World* is thrown into the scale on the side of the quack. This is a very different position and one which we venture to hope will never be taken up by any considerable or important section of the British press. There are papers published in London which make no secret of their animosity to the medical profession, but even when certain of them were placing before their readers the disgusting offers of Madame Frain, Lady Montrose, and the other advertisers of the same kidney, they one and all abstained from backing up the quackery to which they gave publicity by editorial pronouncements, spontaneous or purchased. But while we are thanking God that our papers are not as this American paper, let us not forget that until recent events scared or shamed them from earning ill-gotten gains, many of our journals were in receipt of large and regular sums from persons who were either abortion-mongers or obtainers of money upon false pretences or both. This situation must not arise again and medical men should be particularly concerned in ensuring this. Therefore if our readers see a suspicious advertisement in their local papers, or any advertisement of the most perfect superficial innocence but emanating from one of the quacks whom we have recently exposed, we hope they will send us a marked copy of the paper that we may take the proper steps.

HOMES FOR EPILEPTICS.

J. E. N.—Our correspondent might apply to the Meath Home of Comfort, Westbrook, Godalming. There is also the Colony for Epileptics at Chalfont St. Peter, the London offices of which are at 12, Buckingham-street, W.C.

THE DISPENSING FATALITY AT STOCKPORT.

In this case a patient died after taking a dose of a medicine dispensed by an unqualified dispenser upon, we must say, a most carelessly given prescription. The prescription in question was partly verbal and partly written. The dispenser at the inquest said that "morphia a drachm and a half" was ordered. The prescriber had meant solution of morphia but the dispenser took it to mean the pure alkaloid or its salt. He however only put in 50 grains because he had no more. Mr. Glyn-Jones, a member of the Pharmaceutical Society, has written to us "to emphasise the need for requiring a legal qualification from those engaged in the dispensing of poisons, whether in doctors' surgeries or chemists' shops. It may not be expedient to adopt the continental system by which doctors are not allowed to dispense their own medicines, but it ought to be easy to enact that the assistant employed by the doctor to dispense should be either a legally qualified medical man or a chemist. Such an enactment would be not only in the public interest, but would also work greatly to the advantage of the medical profession. It would be difficult to run cheap dispensaries if qualified dispensers had to be employed. If it was required that the dispenser employed should have a legal qualification the demand for qualified medical assistants would be considerably augmented. Apart, however, from the interests of the prescriber and dispenser there can be no doubt that the public are entitled to have their medicines dispensed by efficient assistants and to know that such efficiency has been vouched for by a legal qualification." We think Mr. Glyn-Jones's suggestion is a wise one. The unqualified dispenser is almost as dangerous as the unqualified medical man.

BODILY EXERCISE.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers tell me of a recent work on the physiology of bodily exercises or the therapeutics of exercise, or a work bearing on this subject? I am, Sirs, yours faithfully,

Jan. 23rd, 1899. N. H.

P.S.—I have read Lagrange's work.

*** The subject is dealt with in "The Elements of Physical Education," by David Lennox, M.D., and Alexander Sturrock. Blackwood. 4*s*.—ED. L.

"THE STYLE OF PHYSICIAN."

To the Editors of THE LANCET.

SIR,—As a Doctor of Medicine without a diploma from a College of Physicians I have always held I should be wrong to term myself a "physician," and in the witness-box have denied when asked or it has been suggested that I am one. I should like to be informed whether that attitude is correct and if I should permit myself as now to be called a consulting physician [what other designation would do?] to an institution. It seems to me the only persons who can properly term themselves "physicians" are those who possess a College of Physicians diploma and that anyone else using that title is deceiving the public and could be proceeded against for illegal assumption of a diploma. I may be wrong and am open to conviction and wish to know whether a Doctor of Medicine only is legally a physician.

I am, Sirs, yours faithfully,

Jan. 31st, 1899. S. H.

THE CASE OF WICKHAM *v.* PAYNE.

In this case recently tried in the Probate Division the plaintiff, Mrs Wickham, claimed revocation of the will of her brother, alleging that the residuary clause had been obtained by the undue influence of the defendant's husband, Mr. Frank Cobham Payne. Mrs. Wickham's brother was a Dr. Tomkin and Mr. Payne is also a medical man. We need not go into all the allegations made by Mrs. Wickham for they were of a most disgraceful nature, but we will only say that the jury (the plaintiff's counsel having withdrawn from the case) found for the defendant—that is to say, they found practically that Mr. Payne was perfectly innocent of all the horrible crimes attributed to him although the legal defendant was his wife. We heartily congratulate Mr. Payne upon the result of the trial.

DOES ASPIRATION OF AIR THROUGH CHLOROFORM RENDER IT INERT AS AN ANÆSTHETIC?

To the Editors of THE LANCET.

SIRS,—When using a Krohne and Sesemann inhaler I find that it is practically impossible to get a patient under the influence of chloroform which has previously been used, it having had a large amount of air pumped through it. We say So-and-so has only taken two drachms of $CHCl_3$ during the operation, but it will be found that the remainder of the chloroform left in the bottle is practically, if not wholly, inert. At least, that has been my experience and I would like to hear if it has been the experience of anyone else. Is this failure of the anæsthesia due to (*a*) the impurities which have been pumped into it from the air or (*b*) has the chloroform become chemically altered by the same agency? A chemical analysis would clear up this latter point. Is there anyone who will undertake it? Thanking you for inserting this.

I am, Sirs, yours faithfully,

Tynemouth Hospital, Dec. 2nd, 1898. A. ALISON BRADBURNE.

*** We have consulted many of those who employ Junker's inhaler (Messrs. Krohne and Sesemann's pattern) and find they have not observed any change in the chloroform after use. The tests given in

the British Pharmacopœia, 1895 edition, p. 75, will demonstrate any impurities in the chloroform employed. These tests are easily performed, but if they do not satisfy Mr. Bradburne we suggest he should collect his residues after several operations, and when he has obtained some ounces he should send them to the original makers of the chloroform which he uses and request their chemists to report upon the sample. If he will send us such residues we will analyse them for him with pleasure. Good chloroform, we need hardly say, should not undergo any change after air is pumped through it.—ED. L.

THE APPOINTMENT OF PUBLIC VACCINATORS: AN ETHICAL QUESTION.

WE publish these letters at the request of Mr. Mackenzie and on the whole believe it may be for the good of the profession that such subjects should be publicly discussed:—

Foulby, Wakefield, Dec. 2nd, 1898.

DEAR MACKENZIE,—Would you have any strong objection to my applying to the guardians for the public vaccinations in Crofton and Sharlston? The population of Crofton is three or four times greater than it used to be, and Sharlston also is considerably increased. The two would make one good district which might be sanctioned by the L.G.B.

I am very busy, otherwise I would come over and see you about it. Give us young uns a chance!

Yours very truly,

J. M. HERMON.

Normanton, Dec. 4th, 1898.

DEAR HERMON,—Thanks for letter of 4th. I shall have a very strong objection on personal as well as professional grounds. Have you seen the L.G.B. Order? It proposes entirely new duties for public vaccinators of a police nature and they are going to give us 1*s.* for what the ordinary "bobby" would get at least 3*s.* 6*d.*

We public vaccinators are now struggling to improve this, not only for our own sakes but for those that come after us and for any outsider to apply for any part of our appointments at this crisis would, to say the least, be scandalous and most of the profession would look at it as infamous—and you may be quite sure if any man comes between me and the guardians he will have a warm time of it. Yours sincerely,

W. S. MACKENZIE.

P.S.—I shall be delighted to see you at any time and open your eyes on the subject.

Foulby, Wakefield, Dec. 13th, 1898.

DEAR MACKENZIE,—I have asked the opinion of some of my neighbouring medical friends about the vaccination question and all have agreed that considering that I live in one of the parishes in question and attend probably nine out of every 10 families in the other and have lived here for five years already I am not doing anything either scandalous or infamous nor unprofessional; I therefore intend to apply to the guardians and in doing so I feel that in one respect I am like you—viz., I am making the application not so much for myself as for whoever may follow me in work here, as it seems unlikely and unfair that the whole of Crofton shall have its public vaccinator living at Normanton, more than four miles away. I thought it better to tell you this as until hearing the opinions mentioned I had given up the thought of applying. Meantime yours very truly,

J. M. HERMON.

The Orchard, Normanton, Dec. 17th, 1898.

DEAR HERMON,—On returning from a short holiday I find yours of 13th Do you mean to say you have submitted to medical friends the question whether you are or are not to apply for an appointment which I have held for about 30 years, which I hold now, and have no intention of resigning, and that they approve of your applying for it? No medical man in this district will dare to say so to me in front of his medical neighbours.

They must have been *pulling your leg.* I never heard of anything more unprofessional and intend to publish the correspondence but will wait a few days for your reply.

Your plea that it is not fair that Crofton should have its public vaccinator four miles away is too ridiculous; the few minutes it takes me to go to Crofton is no great tax upon any man's time as long as he is willing. And it is all the same to Crofton people where the public vaccinator lives. Yours faithfully,

Dr. Hermon, Foulby. W. S. MACKENZIE.

Foulby, Wakefield, Dec. 20th, 1898.

DEAR MACKENZIE,—I understand that at the next meeting probably of the guardians the whole question of vaccination districts is to be considered so I will not find it necessary to make a direct application.

I should imagine that the *personal* objection weighs with you more than the *professional* one, but the whole tone of both your letters is of such a bullying nature that I cannot take them as being seriously meant. I think your letters would not look well in print, but you can print them if you like—I have no objection.

Yours very truly,

J. M. HERMON.

P.S.—Of the medical men I consulted two are Public Vaccinators.

The *Wakefield Express* of Jan. 7th contains a report of the meeting of the Wakefield Board of Guardians at which a letter was read from Dr. Hermon offering his services as public vaccinator for Crofton and Sharlston and suggesting the formation of a new district, so that Dr. Hermon has evidently reconsidered his decision that he would not find it necessary to make his application directly. We think it unfortunate under any circumstances for a medical man to seek a post which is held by another medical man and therefore regret that Dr. Hermon should have made his application, to which, by the way, the board of guardians, instructed by their clerk, found that they were unable to accede. We would at the same time point out that Dr. Hermon informed Mr. Mackenzie of his wishes before making the application, so that the element of secrecy which we have had several times to condemn strongly is absent in this case. Again, Mr. Mackenzie's tone in his letters is unfortunate, so much so that we can understand Dr. Hermon's inclinations running rather towards disobeying than towards obeying the wishes of his senior *confrère.*

THE REICHARDT FUND.

To the Editors of THE LANCET.

SIRS,—Dr. Goodhart and I have to acknowledge the receipt of the following contributions on behalf of this fund. We beg to remind the very many members of the profession who are interested in the home treatment of mental disorders that very few have so far contributed in aid of this fund. I am, Sirs, yours faithfully,

3, Henrietta-street, W., Feb. 6th, 1899. GEO. H. SAVAGE.

	£	*s.*	*d.*
Dr. James F. Goodhart	10	10	0
Sir John Williams, Bart.	5	5	0
Mr. Henry T. Butlin ...	5	0	0
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Mr. C. H. Broadhurst...	1	1	0
W. B. J.	0	10	6

Cottage.—So far from the action being unprofessional it *may* be almost a professional duty. We speak from the facts supplied; we do not know the population of the district, or how far other medical men may be affected, or what arrangements it is proposed to make for an honorary medical staff.

Querist.—(1) A medical man should not act in consultation with an unqualified person under any circumstances or attend cases where such a person is in any way responsible for the treatment; (2) THE LANCET, April 4th, 1896, p. 961.

L.R.C.S. Edin.—The fares are paid of gentlemen who come on approval. If an assistant accepts an offer of engagement we do not think it is usual to pay him his travelling expenses.

L.R.C.P., &c.—"Psycho-therapeutics," by Dr. C. Lloyd Tuckey, and "The Practice of Hypnotic Suggestion," by Dr. G. C. Kingsbury, might be consulted.

C. S., M.D.—Certainly the letter is in very poor taste. But we think it preferable not to notice it.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 9th, 1899.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 a.m.
Feb. 3	29·81	N.	...	54	41	32	32	33	Overcast
,, 4	29·99	E.	...	74	43	30	31	32	Foggy
,, 5	29·51	N.E.	0·40	43	40	31	38	38	Raining
,, 6	29·74	S.E.	0·04	47	47	37	38	40	Cloudy
,, 7	29·48	S.W.	0·28	76	56	38	46	47	Overcast
,, 8	29·48	S.W.	0·13	56	55	47	49	51	Overcast
,, 9	29·50	S.W.	0·27	64	55	49	48	50	Cloudy

During the week marked copies of the following newspapers have been received: *Aberdeen Journal, Lancaster Guardian, Manchester Guardian, Leeds Mercury, Derbyshire Times, Architect, Citizen, Scotsman, Times of India, Pioneer Mail, Builder, Yorkshire Post, Eastern Morning News, Liverpool Daily Post, Bristol Mercury, Brighton Gazette, Hampshire Telegraph, Notes and Queries, Fleetwood Express, Punch, Shields Daily Gazette, Sanitary Record, East Anglian Daily Times, Nottingham Guardian, Birmingham Daily Gazette, West Ham Guardian, Sheffield Daily Telegraph, London Express and Star, Local Government Chronicle, Reading Mercury, City Press, Surrey Advertiser, Mining Journal, Hertfordshire Mercury, Public Health, Local Government Journal, Kentish Mercury, Cheltenham Examiner, Undertakers' Journal, Indian Daily News, Inventions, Chemist and Druggist, Nature, Health, Christian, Loughborough Examiner, Licensed Victuallers' Gazette, Irish News, Merthyr Times, Elgin Courant, Huddersfield Examiner, Isle of Man Times, League Journal, Hexham Herald, Sunderland Morning Mail, Warder,* &c., &c.

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X.—X. Y. Z.

Y.—Dr. R. A. Yeld, Lond.

Z.—Zeta.

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